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Defense Section

[Fourth Annual Mill Check-Up Number]

Textile Modernization for Defense (Introduction) 91

How National Program Affects Modernization of Your:

Productive Equipment . . . 92
Machinery Layout 94
Production Planning . . . 95
Working Conditions 96
Employee Training 98
Research & Testing 100
Purchasing Department . . 102
Sales Department 103
Accounting & Financing . . 104
Trade Association 105
Power Generation 106
Power Transmission . . . 106
Buildings & Services . . . 108
Dyes & Chemicals 110
Latest-Type Materials . . . 112
Maintenance 113

Management

What of Tomorrow? (Editorial) 67
The Editor Says 68
In This Issue 69
Institute Points Toward Promotion to Boost Cotton 70
NACM Holds Town Meeting; Honors Samuel Slater 72
Khaki Cloth Bids Take Spotlight 74
Dinner to Honor Educator Hears About Army Textiles 78
Canada—Partner in Defense 79
Should Include Coming Taxes in Costs 146

Methods

Fabrics for National Defense—Specifications 76
Dyeing Military Fabrics—Olive Drab and Khaki 77
D-13 Holds New York Meeting 80
Innovation at AATCC Meeting—Sectional Contest 82
Soaking Ingredients Carefully Chosen for Crepe Effect 86
Fabric Defects Less Troublesome When Properly Named . . . 87
Blueprinting Wool Staples 88
Fixing Hosiery Machines—Full Fashioned 89
Fixing Hosiery Machines—Circular 90
Good Housekeeping for Mills 134
Loomfixers' Manual—Cotton 137

Merchandising

Greenville Holds 2nd Annual Cotton Festival 81
Newest Fabrics on the Road—Upholsteries at Auto Show . . . 85

Men

Young Men in Industry Given Opportunity for Initiative . . . 84
Social Security Laws Analysed at Gaston County Meeting . . 133
Business Men and Social Welfare 145

DEPARTMENTS

Textile Equipment News..... 115
News of the Month..... 138
New Publications 120
The Overseers' Corner..... 131
Questions and Answers..... 135
New Machinery and Processes..... 115
Textile Calendar 140
Leading Editorial 67
New Dyes and Chemicals..... 118
News of Suppliers..... 122
Free for the Asking..... 128
News About Men..... 154
Textile Mill News..... 168
Overseers' Practical Helps..... 132

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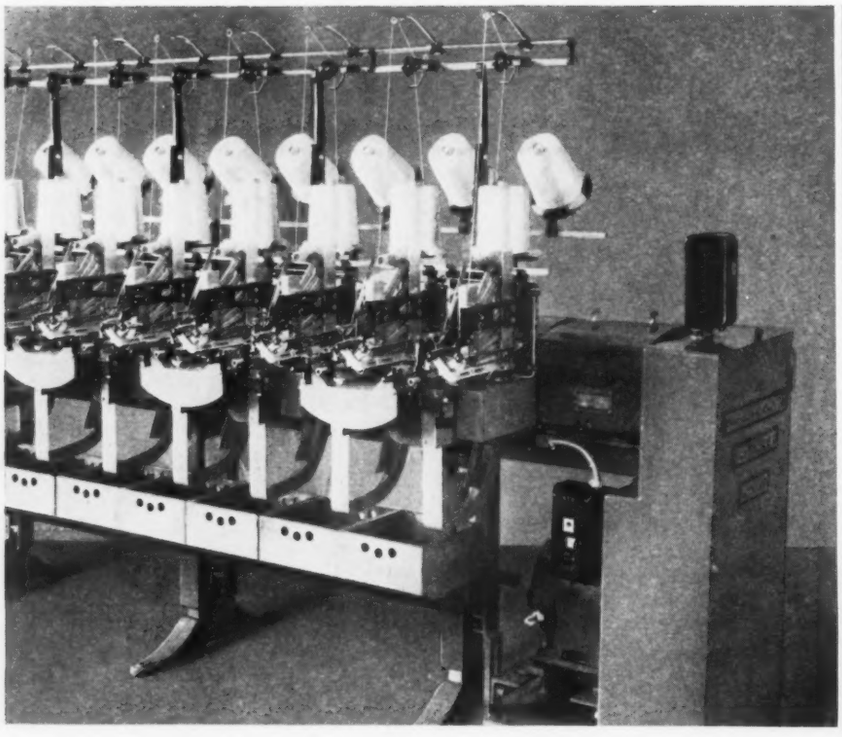
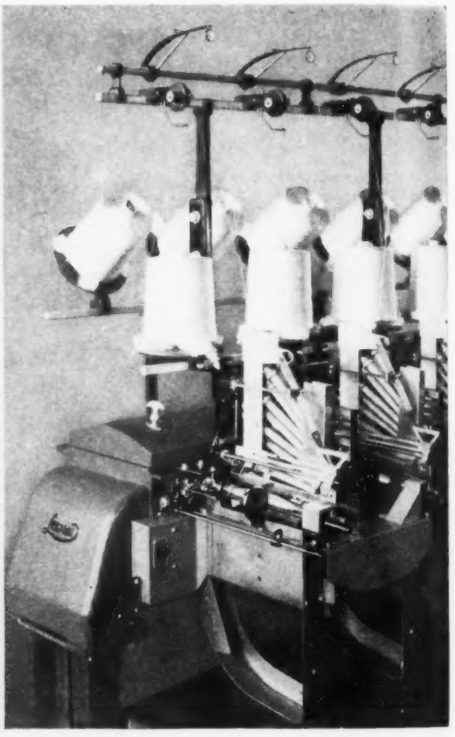
Universal Winding Company

ANNOUNCES A

New Automatic Bobbin Winder

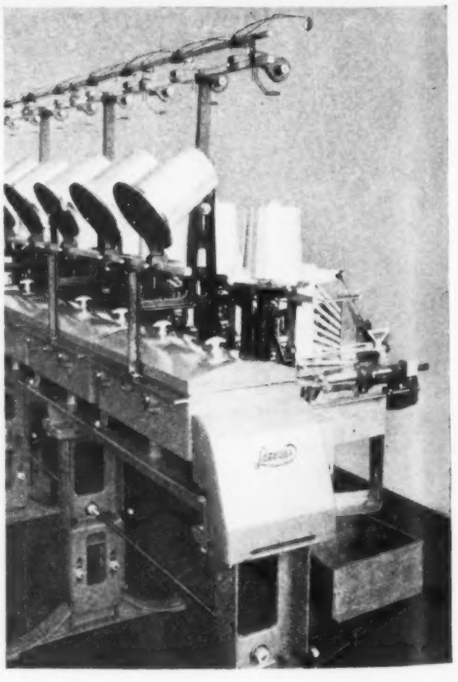




The Universal Automatic Bobbin Winder is a high-speed machine which discharges full bobbins and starts winding new bobbins automatically.

All bobbins can be wound to correct specifications for any type of automatic loom.

Mill tests have proven this winder to be successful on all textile fibres. We are proceeding with a schedule that will enable us to make shipments during the first quarter of 1941.



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TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

What of Tomorrow?

THE ELECTION IS OVER. Whether you or I like or dislike the result is of no moment now. The American people have designated a man and a party to lead them for these next four terrible years.

We say "terrible" advisedly. There can be nothing sweet about those years. There can and will be everything horrible about them.

One unbelievably sadistic dictator, dragging along his weaker allies and prostrate victims, represents the common enemy of all of us.

So far, only one of the many nations he has attacked has been able to stop him. The heroism of that nation defies description. Scourged by the fires of hell let loose by World Enemy No. 1, Great Britain still stands unbowed and unafraid on her little isles. Her people—plain, ordinary people like you and me—have set a new high for courage and sacrifice. World history holds no more sublime record than that of British resistance during these last frightful months.

Fortunately, both candidates were united in a pledge to continue all aid, short of war, to Great Britain. In so doing, they expressed the wish of the great majority of American people. And now, with the political blitzkrieg out of the way, that help will continue at an accelerated pace.

God willing, the forces of hate and destruction which this modern monster Hitler has directed against all peoples—belligerent and non-belligerent—will be checked by the one country he really fears: Great Britain. To that end, the United States must direct every bit of its defense effort that it can spare, compatible with the defense of its own shores.

BUT WIN OR LOSE, Hitlerism and its by-products will continue as the greatest threat to humanity. There can be no real peace, either way. There can be only struggle.

If Hitler wins, this country will have to fight him and his satellites. If he loses, we will have to fight the menace of a world prostrated by war, hate, famine and disease.

This is not a pleasant editorial. But the world is not pleasant, today.

The saddest part, so far as this country is concerned, is the lack of complete realization of the world revolution that is going on today. We know a relatively few men who are weighted down by the somber prospect ahead. Unfortunately, most of those men are *so* weighted down that they have accepted defeatism as their school of thought. We also know a great many who fight the war against Hitlerism, verbally, on the commuting trains en route to the city, or in their mill offices, but who find security in the belief that "Hitler can't win." Their optimism is more refreshing, but less realistic, than the pessimism of the few. They delude themselves with the idea that the defeat of Hitler would mean the return of the world they have known. We also know a still greater number who believe this war is "no problem of ours," and that we can just go our own way and let Europe "fight it out." Their nonchalance is good only for cigarette advertising.

But outnumbering these three groups, at least 10 to one, is the great mass of American citizens who have no point of view other than bewilderment. They just don't know.

That attitude, if not immediately constructive, is at least honest. More than that, it reflects an open-mindedness which gives promise of constructive action, if and when direction-lines of such action can be indicated.

IN UTTER HUMILITY, this writer—as one of the bewildered majority—offers certain lines of thought as departure points:

1. Everything that has happened in Europe should merely reinforce our national confidence in the democratic ideals through which we have achieved greatness during more than a century and a half.

2. There can be no compromise insofar as those ideals are concerned. You can't have a Hague type of Hitlerism in New Jersey, for example, and still remain a pure democracy as a nation. The Hagues and the Kellys—and the other rotten apples—will eventually spoil the whole barrel, if not removed. So, the first job seems to be a fumigation problem in our communities, our counties, and our States. That's the starting point.

3. The Federal Government will have to become a *national* Government—not a breeding place for isms, no matter how sincere the proponents of some of those isms may be. The Government must shun class distinctions and class hatreds as it would shun leprosy. Employees of the Government—from the President down—must consider themselves as merely that: employees. We, the people, hire them. They express the will of the electorate—or else!

4. In asserting ourselves as "we, the people," we can't take the risk of utilizing self-constituted minorities. We can't permit one group to put on fancy-colored shirts, or even wave the American Flag and presume to talk for other groups. That way, more than any other, lies Fascism. If we are to be alert in smothering un-American

tendencies, we must do it by regularly-constituted agencies of our National, State, and local Governments. And in this connection, it seems to this writer that we could well afford to divert at least a small part of our defense appropriations toward strengthening one arm of the Government: the FBI. That agency has more potentiality as a defense mechanism against un-American activities than all other agencies in the country combined. *But,* in giving the FBI that added support, it should be stipulated that it concentrate its attention upon groups representing foreign Governments and foreign ideologies, and upon racketeering breeding-spots of local, State or national isms. If the Department of Justice ignores the type of menace represented by Hague, and spends its money on prosecuting groups which are trying to inject sanity into sick industries, then the Department itself is sick, and needs a dose of castor-oil. After the medicine has taken effect, then the FBI should be endowed with unlimited funds to go get the enemies of American democracy. What happened in Norway and in many other countries *can* happen here. It is not yet too late to stop it.

5. It is about time for all of us to realize that we are on the same side. What happens to capital will happen to labor. What happens in New Jersey will happen in Montana. What happens in textiles will happen in public utilities.

Futile as the defeatists regard this thing called cooperation, it actually is the only way out. Democrats, Republicans, Socialists, Labor, Capital, Consumers, Rich, Poor, Privileged, Under-Privileged, Catholics, Jews, Protestants, —all these groups, and many others, have one common goal: the defense against an attack on the principles which we hold dear. Defense against submersion of the Bill of Rights. Defense against the intrusion of any one man as the Court of Last Appeal. Defense against brutality and stupidity and cupidity.

Military, naval, and air defense, yes! But, far more than that, a psychological defense which arises from the hearts and consciences of the American people.

And, on the positive side, a determination to go forward; to explore new frontiers of human progress; to capitalize the gains achieved in our yesterday merely as stepping-stones from the chaos of today into the world of tomorrow.

If this hope is futile, then all mankind, in its past, present and future, is futile.

But it is not.

Douglas G. Woolf

THE EDITOR SAYS

Fashion Futures

Announcement of plans for New York's Fashion Futures Dec. 10 and 11 is good news. The success of this fashion show is assured in advance by the type of organizations backing it. It will be sponsored by the Mayor's Business Advisory Committee, of which the textile industry's own George Sloan is chairman, and will be presented by the Fashion Group, Inc. We can't imagine a better combination.

In our September issue, we stated: "Without prejudice to any of the other organizations involved, it is our feeling that the Fashion Group is the best nucleus for an attack on this whole problem. Its members are women who have devoted their lives to fashion, in its various phases, as a profession. Their jobs touch all the industry and trade groups which make up the cycle from 'a new idea' to 'out the back door.' Their leadership in the present transition stage is essential."

We are certainly glad that they are asserting that leadership.

L.f.R.A.S.t.N.M.t.T.M.

One of our pet pairs of comedians used to admit to their audiences: "We don't sing so good, but we sing loud."

Certain after-dinner speakers who inflict themselves upon textile audiences might declare, with equal truthfulness: "We don't talk so good, but we talk long."

As a modest worker in the "League for Restricting All Speeches to Not More than Twenty Minutes," this writer advocates direct action on the part of the audience. "Get up and go," is his advice. He practices what he preaches; he leaves at the end of the first 20 minutes—and never even inquires what was said in the remaining hour and a quarter.

A banqueteers' strike is in order. Join the L. f. R. A. S. t. N. M. t. T. M. You pay no dues, and you save yourself a lot of wear and tear.

Salute to Harry Riemer

As a member of his craft, we think we know better than most of those who attended the dinner to Harry Riemer just why the industry honored him. Harry is, first and last, a swell reporter.

But he is more than that. He is a swell guy. His ever-ready smile is something which his "competitors" enjoy as much as do his "customers." If Harry ever gets mad about anything or anybody, he manages to keep it to himself. And that's an art.

Harry's friends are legion. And this writer is proud to be numbered among them.

Letter from War Zone

The following letter from Norway was opened and *passed* by the censor! We are withholding the writer's name, for his own possible protection—although he himself did not request us to do so.

OSLO, NORWAY

Editor, TEXTILE WORLD:

The June issue just arrived about a month after the July issue, so up to now I am happy to report that I have my TEXTILE WORLD complete in spite of all. I think this is so great credit to your distribution department, as yours is the only U.S.A. technical monthly I now receive. You can scarcely imagine what it means to get this sign from a happier world now.

I found your editorials especially sensible these last three months, as these and other news items indicate that U.S.A. is about to awaken from the blueyed, careless and materialistic state of mind, that *we* had too much of. I hope that you have learned from our disgrace, especially that there is no group too comical and insignificant to grasp the ruling power from the other 99% when they get the opening; and that all these leagues for peace, etc. are poison.

Thanks for the many happy and interesting moments I have had with TEXTILE WORLD. READER

DO YOU WANT TO MAKE MONEY?

If you do, turn to page 91, the start of the "Textile Modernization for Defense Section" of this Annual Mill Check-Up Number of TEXTILE WORLD.

But, more important still, you will learn how you can best serve your country in this hour of crisis.

Take this issue home with you. Read the special section, and again. Then you will understand why we are proud of the staff which produced it. There isn't a line of hooey in it. It's straight bread-and-butter information for the 11,000 subscribers, and at least 25,000 readers of TEXTILE WORLD.

After you read it, let us have your comments.—*Editor.*

In This Issue

MODERNIZING FOR DEFENSE
Special Section Begins 91
For Detailed Contents See Contents Page 65

GENERAL
What of Tomorrow? 67
New Army Cloth Bids Take Spotlight 74
Dinner to Algeo Hears About Army Textiles 78
Canada—Partner in Defense 79
D-13 Holds New York Meeting 80
Automatic Filling-Bobbin Winder 115
Welding Jig for Shuttle Feelers 132
Should Include Expected Taxes in Costs 146

PUBLIC RELATIONS
Institute's Promotion to Boost Cotton 70
Greenville Holds Cotton Festival 81
Young Men Given Opportunity for Initiative 84
Good Housekeeping for Mills 133
Social Security Law Discussed 134
Business Men and Social Welfare 145
Tribute to Sidney B. Paine 147
Training for Career in Textiles 148
Textiles in Red Cross Roll Call 149

COTTON
Institute's Promotion to Boost Cotton 70
N.A.C.M. Holds Town Meeting 72
Khaki Cloth Bids Take Spotlight 74
Fabrics for National Defense 76
Greenville Holds Cotton Festival 81
Cotton Used in Modern Automobiles 85
Fabric Defects Less Troublesome 87
Cotton Opener and Cleaner 116
Identifying Drawing Cans 132
Lay on Spinning Frames 135
Filling Yarn Containers 136
Good Housekeeping for Mills 134
Loomfixers' Manual—Cotton 137
Should Include Expected Taxes in Costs 146
Training for Textiles 148

WOOL
Army Authorities Concerned About Wool Prices 74
Upholsteries at Auto Show 85
Blueprinting Wool Staples 88
Bunch-Saving Attachment 116
Wool Blower 116
Full-Width Washing Machine 117
Scouring Olive Drab 132
Finishing Army Overcoating 135
Streaky Effect in Tropical Worsted 135
Warp Breaks in Rayon-Wool Weaving 135
Poor Worsted Carding 136
Drying Woolen Blanket Fabrics 136

RAYON & SILK
Soaking Ingredients Carefully Chosen 86
High-Speed Creel Tension 115
Crepe Tension 116
Silk Soaking Compound 118
Warp Breaks in Rayon-Wool Weaving 135
Knitting Rayon Fabric 136

KNITTING
Fixing Hosiery Machines—Full-Fashioned 89
Fixing Hosiery Machines—Circular 90
Thread Ratio Control for Hosiery Seamers 115
Knitting Machine Operation 120
Needle Lines in Knitted Fabric 135
Knitting Rayon Fabric 136

PROCESSING
Dyeing Military Fabrics—O.D. and Khaki 77
Innovation at A.A.T.C.C. Meeting 82
Furnisher Brushes with Nylon 115
Full-Width Washing Machine 117
Mildew Preventive 118
Synthetic Resin Finishes 120
Scouring Olive Drab 132
Finishing Army Overcoatings 135
Drying Woolen Blanket Fabrics 136

Fashion-Shift News Is Still Red Hot

INTEREST has not abated in the much-discussed Paris-to-New York fashion-center shift. On the contrary, a succession of new developments has increased its news value. (See editorial comment on opposite page; also news item on page 138.)

Among recent events was the awarding of prizes in the Chicago Tribune "American Fashions" show, held last month. At left is a group of prize winners. These are (left to right) Kathryn Bill's four-in-one dinner suit which won the grand prize of $3,000; Patrick's evening dress of bouffant white tulle, awarded $2,000 in second place; Donald Frist's evening gown of pale pink net over pink taffeta, fourth place and $500; Nancy Layton's street ensemble of Quaker gray wool, third prize of $500; and a sophisticated evening gown by Emmet Joyce, fifth place and $500.

Institute Points Toward Promotion

New program aims to boost cotton consumption to 10,000,000 bales

THE COTTON-TEXTILE INSTITUTE returned from the wars at its 14th annual meeting in New York Oct. 23. It turned its back, hopefully, on the defensive program it has been forced to maintain during the recent years of legislative experimentation, and faced, even more hopefully, the job of increasing domestic cotton consumption to 10,000,000 bales a year. To that end, it has secured to date pledges of special assessments of 2¢ per bale of cotton consumed, from 50% of the total active spindles; has enlisted the cooperation of all groups engaged in cotton economy, from the grower through to the retail distributor; and proposes to develop a great Cotton Bureau of America.

That was the theme of the annual meeting. It was expressed in these words: What can be done to improve the machinery and methods of cotton goods distribution? In support of that theme, Dr. Claudius T. Murchison, president of the institute, produced a galaxy of stars including representatives of the chain-store field, the retail dry-goods trade, the converters, the brokers, and the purchasing agents. As home talent, he presented three members of the institute staff at the luncheon-meeting.

And one of the speakers, the converters' representative, added to the joy of nations by staging a style show which demonstrated, among other things, the step-down from an $85 costume made of lowly 10-oz. osnaburg to a copy at $10.95 by a Fifth Ave. store, and then to a $1.95 job for the masses. Since none of our friends, so far as we know, invested in the $85 model, we are not getting into complications—we hope—by observing that the $1.95 sublimation looked just as good to us.

There is of course the possibility that the models—in this case we mean the living models—obscured our vision. At any rate, it was at this stage of the proceedings that an institute member leaned over to us and said: "The institute is certainly stepping out!"

As a prelude to the development of the main theme of the meeting, there was the always-delightful introduction by Goldthwaite H. Dorr, chairman of the board of the directors of the institute. When more graceful introductory remarks are spoken, we are sure Mr. Dorr will say them. He painted a word-picture of the way in which the textile industry of Great Britain is helping that nation to meet its greatest crisis, and declared, for our own domestic industry: "Whatever the demands may be, we too will meet them." He left this writer with the comforting feeling that, while nations and ideals crash in the Old World, there is still left at least one democracy in which an industry can get together and plan for aggressive *productive* enterprises.

NOW FOR THE DETAILS of what really happened at the institute's annual meeting.

C. T. Murchison's annual address set the stage for the symposium on distribution. He said in part, "Every industry, group and economic activity should find its justification in the value which it creates for society. But, as we have seen, such values have no bearing upon the policies of the State unless they are publicly recognized.

"If the industry is to become a great force in raising the level of national life, its scope must be regarded as including cotton farmers and all allied groups engaged in the ginning, marketing, compressing and transportation of raw cotton and also the processors of cotton seed. We must also regard as merged with us selling agents, converters, finishers, cutting trades and all secondary processors of cotton yarns and fabrics. Likewise, those industries whose major function is to provide textile equipment and supplies should be included. Beyond these is the great army of cotton goods distributors, the wholesale and retail merchants of the United States whose number runs into the hundreds of thousands and whose volume of sales of cotton goods will approximate annually four billion dollars.

"The necessary coordination of all groups can be achieved through centralized and expert responsibility. I am certain that the program's results this year will encourage the industry to give more nearly adequate financial support to the effort, so that the institute can develop within its own framework a really great Cotton Bureau of America—an organization which will constitute a full mobilization of every resource of the industry and will provide the necessary liaison, interchange of information, stimulus of new suggestions and promotion springboard which cotton today needs so desperately.

"At the moment, and probably for some months to come, the industry will be greatly absorbed in doing its part to meet the requirements of the national defense program. Generally speaking, the industry will meet the major requirements of the Government in normal stride, promptly and easily and at low prices. Here and there, tight situations will probably develop but they will be temporary. Government requirements over a 12-months period will not exceed 10% of a normal year's output. After the first year, owing to the slow rate of replacement, certain items in total Government demands will be even less. If 90% and probably more of our business is for civilian requirements and promises to continue so, obviously our main concern at the present time is with the outlook for private cotton consumption."

John P. Nichols, managing director, Institute of Distribution, Inc., spoke on behalf of the chain store. He said in part. "Though Government purchases for national defense purposes will undoubtedly require a substantial amount of American cotton, the demand will still fall short of the huge supply, and the problem of finding a domestic market for 20 to 25% more cotton than has ever before been consumed in the United States for apparel, household items and industrial products, in any single year, is still active. On the achievement of that goal rests not only the earning and spending power of the 12,000,000 Americans who depend on cotton for a complete livelihood, but also the economic well-being of 130,000,000 American people."

After sketching the growth of promotional events and groups in the field, he came to National Cotton Week, of which he said: "The project was supported by organized retailers of all kinds, chain and independent. Our campaign group was made up of 134 well-known non-grocery chains operating about 15,530 units, coast-to-coast.

And, strangely, among the active participants in your Cotton Week were the companies of our group that operate in such fields as restaurants, lumber, candy shops, cigar and other establishments wherein no cottons are sold. It is estimated that the sales of cottons and allied cotton products of the companies comprising the Institute of Distribution group aggregate approximately $800,000,000 annually.

"If King Cotton's goal of a substantially expanded domestic cotton market is to be attained, a year-round retail push, in our judgment, should become wedded to a realistic, year-round educational program provided by the cotton industry itself, which should be designed to fashion public attitudes and to create increased cotton demand. When cotton moves, America goes forward; when it halts, America halts, too."

Lew Hahn, general manager, National Retail Dry Goods Association, New York, gave the independent retailer's viewpoint. He began by touching on the lack of glamor in cotton. "We have known it for so long—it is a good old drudge of a fiber, and needs to have its face lifted," he said.

He recommended that, in this age of the test-tube, the arts of chemistry be applied to cotton. Now cotton is being used mostly where it doesn't show—underwear, shirts, bed sheets. He named an obvious exception—cotton dresses, but said that they did not solve the problem and that, in the range from $3 to $10, dress manufacturers do not do a good job for cotton.

One rayon company alone, he asserted, is spending $10,000,000 a year on research. "And what are you doing?" he asked. "For too long you have expected a Congressman to solve your problems. You must find your own way out."

"Cutters are telling our members," Mr. Hahn said, "that because of Government textile orders prices must go higher, yet you tell me the Government is taking only 10% of your product." He recalled that the blame for high prices after the last war fell without warrant on the retailer's head, and he pointed out his association's current effort to hold down prices with its "buyer's pledge" to resist advances which over 10,000 buyers have signed.

Howard Veit, of M. Lowenstein & Sons, Inc., New York, presented the viewpoint of the converter. He said in part: "Foundation of all big business is the science and the romance of distribution, and it is the almost total lack of knowledge of this science, as well as the lack of romance in your souls, that is the chief cause of such troubles as the industry may have.

"We are in a merchandising business. Every week is national cotton week. Our profits must be a result of proper operation—an operating, not a speculative profit. Earned profits are usually kept. Gambling profits are always succeeded by large speculative losses. It is peculiarly true that when a major part of an industry is unable to earn a profit, every co-related part of the industry finds itself in the same position. Buyers of gray goods would be better off, by far, in their own ability to make a profit, if their sources of supply were making a profit on their sales.

"The one great cardinal principle of distribution is to sell goods when the buyer wants to buy. That cardinal principle is violated by you more often than any other principle of sound distribution.

"When we, your major distributors, buy goods for conversion and resale, we lock ourselves into a position for three to six months, and we need stability of price, not a market which is in a constant turmoil.

"We have a product which can be and should be promoted. To regain our rightful place, glamour must be put into our business. I believe the converter would make himself a part of such a program. You and your distributor might feel it to be mutually advantageous for the converter to be a part of the Institute.

"The industry, as an industry, should also have a research laboratory to develop new uses for cotton, new finishes for cloths, etc. No one company is large enough to do this, but the industry is. The Cotton-Textile Institute should be the agency through which these things could be accomplished.

Sidney H. Scheuer, of Scheuer & Co., New York, covered the broker's role in merchandising. He said in part, "In staple trading, the seller looks to the broker for accurate information, not alone as to price, but prospects of demand, extent of supply or lack thereof—and many other judgments—all of which aid in determining merchandising and sales policies. It is part of the broker's function to bring buyers into line with the realities of the market situation, which, of course, results in the consummation of business.

"It should be the constant effort of the broker to create closer understanding of the mutual problems of producer and converter, and in this direction many of the most stable business relationships have been nurtured by him.

"We are all familiar with the tremendous advance which has recently been made in print cloth merchandising. Confidence has been built because orderly and intelligent selling has been demonstrated. One of my associates recently observed that 90% of our sales were made at "full market prices," and pointed out that the most severe selling competition we meet is from direct selling organizations who, more often than not, under-sell the market. As has been said before, the competent broker does not overpay, nor does he do the opposite."

Courtesy "Daily News Record"

Dr. C. T. Murchison delivering his annual address to Cotton-Textile Institute. (Left to right) John P. Nichols, Lew Hahn, Dr. Murchison and Goldthwaite H. Dorr

Robert C. Kelly, chairman of the textile committee of National Association of Purchasing Agents, considered merchandising as applied to industrial goods. He said:

"In the industrial field cotton fabrics and yarns are used mainly for their utility value, shorn of the embellishments of style and eye appeal. Here your product is evaluated from its physical and chemical characteristics; how wide; how heavy; how strong; how pliable; how absorptive.

(Continued on page 150)

N. A. C. M. Holds a Town Meeting

Also honors Samuel Slater; re-elects Russell Fisher; eats, golfs, and eats

WHERE ARE the set speeches of the textile conventions of yester-year? Not gone—but going, we hope. In their place is coming a "panel" type of discussion, where a group of men sit around a table and talk informally about the industry and its needs.

The National Association of Cotton Manufacturers is doing its bit in this direction. For the second consecutive year, it devoted a session of its annual meeting to this saner form of conventioneering.

Last year, at Boston, the association entertained, and was entertained by, the Textile Foundation's traveling troupe of experts. This year, at Providence (Oct. 9–10), it featured another group of experts, most of whom denied they *were* experts. One went so far as to admit that an expert is "a guy from out of town." We have heard that description applied to "notables," but possibly it describes experts also. However, whether or not it was due to the fact that the six members of the panel were "guys from out of town," they all proved their expertness on their several subjects.

Last year's panel had the cohesive influence of the Foundation's sponsorship, and so directed the discussion toward research and its implications. This year's panel lacked that initial homogeneity, but made up for it by directing its thinking toward the topic outlined by the leader of the discussion: "Tomorrow: the Future." They speculated, out loud, about those problems which men running textile mills ought to have in their minds today.

It was particularly fitting that this type of discussion was held in New England, the birthplace of the town-meeting idea. As the leader of the discussion stated, this type of meeting can't be held in Germany today—or in fact in any country other than the United States. And so he aptly described it as a "precious thing."

So far as the panel itself was concerned, it would be difficult, if not impossible, to pick six men better equipped to discuss the topics assigned to them than those selected by the N. A. C. M.

They and their subjects included: Arthur Besse, president of the National Association of Wool Manufacturers, on "National Defense"; Harold F. Browne, director of the Management Research Division of the National Industrial Conference Board, on "Labor Relations"; Gustavus J. Esselen, industrial chemist, on "Problems of Research"; W. O. Jelleme, of Pacific Mills, on "The Consumer Movement"; Dr. George W. Taylor, of the Wharton School of Finance and Commerce, on "The Economic Outlook"; and John F. Tinsley, president of the Crompton & Knowles Loom Works, on "Mechanical Advancement."

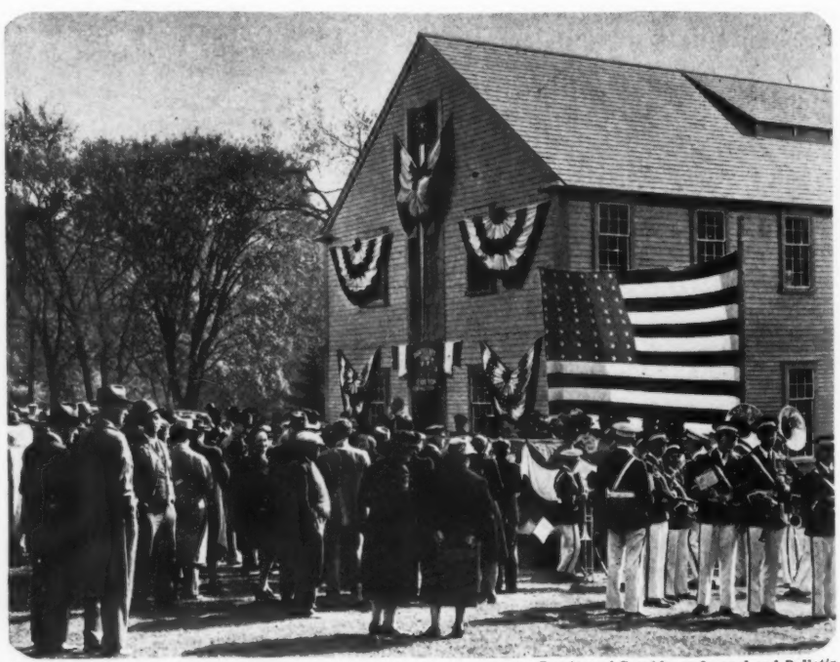
Erwin H. Schell, professor of Business Management, Massachusetts Institute of Technology, served as leader of the discussion, while William D. Fales, head of textile department of Rhode Island School of Design, introduced the members of the panel.

Each spoke to his subject briefly, directly, and constructively. What more can any conventioneer demand?

More about this panel-discussion later on in this report.

The N.A.C.M. was welcomed by the Governor of Rhode Island, William H. Vanderbilt; held a business session at which it re-elected Russell T. Fisher as president; looked to the past, as well as to the future, by participating in the 150th anniversary of the start of mechanical cotton manufacture in the United States by Samuel Slater in 1790—and incidentally the start of the factory system in this country; ate a banquet and listened to an address by M. D. C. Crawford, research editor of Fairchild Publications, on "The Cotton Industry's Contribution to True Democracy"; played golf at the Agawam Hunt Club; and enjoyed a clam bake at the Pomham Club, than which's clambakes there are no whicher. . . . We may have passed over some events, but those listed seem to be ample for a two-day meeting.

THE OLD SLATER MILL sesqui-centennial was a party in its own right. It was attended by many notables—and not all "guys from out of town." Nelson Slater, president of S. Slater & Sons, Inc., and great grand-son of the original Samuel Slater, was there in person. Then there was the delightful old gentleman who invited himself into the reviewing stand,



Courtesy of Providence Journal and Bulletin

SCENE BEFORE THE OLD SLATER MILL, Pawtucket, R. I., showing speakers stand, during exercises on Oct. 10 when N. A. C. M. celebrated the 150th anniversary of the American cotton industry.

Photo by Earl Dumin

SAMUEL SLATER LEFT THEM A HERITAGE: (left to right) Russell T. Fisher, president, N. A. C. M.; H. Nelson Slater, president of S. Slater & Sons, and great-grandson of Samuel Slater whose founding of the American factory system was celebrated on its 150th anniversary; William B. MacColl, president of Lorraine Mfg. Co., who presented a memorial plaque on behalf of N. A. C. M. and the Rhode Island Textile Association.

and whose life-time and that of his family have been tied up with the Slater heritage. Also the volunteer cheerleader in the audience, who was either for or against Willkie (we couldn't get his point quite clearly). And Albert E. Noelte, president of the Old Slater Mill Association, who presided and decided to "skip" a pageant which *wasn't* there. Also William B. MacColl, president of Lorraine Mfg. Co., who dedicated the memorial plaque commemorating the 150th anniversary of Samuel Slater's achievement. And other textile dignitaries: Claudius T. Murchison, president of the Cotton-Textile Institute; Russell T. Fisher, president of the N. A. C. M.; Franklin W. Hobbs, chairman, and Edward T. Pickard, secretary, of the Textile Foundation; and Robert Anthony, president of the Rhode Island Textile Association. Also, a band, a soloist, and representatives of Pawtucket's civil, industrial and religious life. We also must mention some sweet young girls who were taking notes—not for TEXTILE WORLD, we are sorry to say. Samuel Slater was also featured at N. A. C. M. business meeting in a talk by G. W. Gardiner, banker, industrialist, historian.

Altogether, it was a big day for Pawtucket and for the textile industry.

TO COME BACK to the panel-discussions: Prof. E. H. Schell posed the question each speaker answered—"What are the features of the future that we ought to have in mind right now?"

Dr. Geo. W. Taylor forecast a dilemma of increased costs faced with resistance to price advances. High wages but low unit labor costs must be the industry's goal, and relatively high wages can be maintained only by technical improvements, he stated. Tax burdens can be met and high living standards maintained only by higher national income level, he added, and this can be achieved only by lowering unit costs and bettering distribution. He foresaw further regulation by the industry-committee method, and commented, "I would have more confidence in a poor industry committee than in a good bureaucrat." Annual wages must soon come to the forefront, since setting of minimum hourly rates affects purchasing power only slightly unless related to total hours worked. Regional differential is a road that leads to setting of wage scales all along the line. Dr. Taylor posed a few questions of his own—what has been the effect of minimum wage on your industry?—have marginal workers been displaced?—marginal mills displaced? Also what is collective bargaining? It is not collective arguing, he asserted, and there is a job of education ahead—we must make the mechanism work for the general good—for the public interest.

Harold F. Browne stressed that labor relations must be realistic in that they must be based on what *really* exists today. He pointed out that collective bargaining gives workers a class consciousness, yet each worker wants his employer to treat him as an individual. The worker has been kidded so long that he is slow to believe the employer sincere. By contact between rank-and-file employee and top management, said Mr. Browne, the worker must be led to know that he has attributes useful to the company, on which his advancement rests. Mutual confidence is essential, and the employer must build up the idea that he is on the level. The union leader who is a scrapper and seeks primarily immediate results, is being displaced by a more statesman-like type as the organization becomes more stable. Mr. Browne believed that straight-forward, sincere contact with labor would not likely bring charges of coercion under NLRA. Dr. Taylor at this juncture pointed out that many a company, on signing with the union, disbanded its personnel departments—an erroneous step since that department was needed all the more, though on a bilateral instead of a unilateral basis.

Arthur Besse, in considering the textile side of the National Defense program, said that we are preparing for a different kind of war from that of 1917—there are fewer uniforms and more overalls because of mechanization. He classified the bottle-necks as (1) raw materials, (2) machinery, (3) time. Lack of flax and possible later shortages of wool and silk were all he foresaw under No. 1. He saw no machinery bottleneck except possibly on the heavier looms for tent-duck production. On the third item, he pointed out that the Army was now ahead of its schedule. Mr. Besse expressed the hope that the industry would constantly bid on *more* goods than the Army calls for to avoid any charge that the industry was unable to meet the need. He expressed himself strongly as seeing no reason to change the sealed-bid system of buying since the alternate—the contract by negotiation—opens the door to favoritism and chicanery. There is pressure to break down the sealed-bid system, he added, and the textile industry will have to fight to retain it.

John F. Tinsley expressed belief that industry will support high wage levels by using efficient machinery to permit lowest possible unit costs. When is replacement of machinery justified, he asked, and then answered "When a machine ceases to turn out a competitive product." Through the years, he went on, we have built up the idea that a loom lasts 20 years—yet it is the product of the loom not the loom itself that counts. Because looms today are running at higher speeds and for longer hours than 25 years ago, a loom turns out the same yardage in seven to 10 years which formerly took 20. The shorter period therefore becomes the period of obsolescence, he explained.

(*Continued on page 152*)

Khaki Cloth Bids Take Spotlight

20,000,000 yd. called for; offerings fall far short; Army to accept foreign wool

McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
Irvin D. Foos Carter Field
Robert Colborn M. G. Maury

By BLAINE STUBBLEFIELD

ARMY OPENS BIDS on 20,000,000 yd. more of cotton cloth for shirts and uniforms; continues to resist the Hillman-Jackson attempt to have the Quartermaster negotiate textile orders outside the bidding system; expresses concern over the rising price of wool for blankets and uniforms. The Defense Commission takes action on its plans to store 250,000,000 lb. of British Empire Wool; sets up a priorities board which may or may not concern itself with allocation of textile products as between the Service and civilians. Army and Navy find themselves all but completely independent of silk. That outlines recent Washington-defense-textile activity.

Biggest news of the period was Army's big cotton cloth order, bids on which were opened Nov. 5, falling short of the 20,000,000 yd. by 6,327,000 yd. The Quartermaster, apparently hoping for the least possible disturbance of the cotton-textile market, had sprung the call as a surprise. New York knew of it before Washington did.

Further to ease the shock of such a requisition on the industry, the Philadelphia Depot offered three alternative specifications on the 8.2 oz. cloth: (1) Single combed yarn may be substituted for two-ply yarn in the filling, and breaking strength is reduced to 110 lb. in filling; (2) both warp and filling may be either single- or two-ply combed peeler yarn, and breaking strength is reduced to 155 lb. in warp and 105 lb. in filling; (3) cloth to conform to Specification 6S-201A, with exception that single- or two-ply carded yarn may be substituted for combed yarn in filling, yarn count per inch is reduced to 90 in warp and 54 in filling, breaking strength is 140 lb. in warp and 105 lb. in filling, weight per square yard is 8.5 oz. instead of 8.2 oz. No one bidder is to receive orders for more than 4,000,000 yards; delivery, 120 days from date of contracts.

But these alternatives failed to spot enough production capacity under current mill operating schedules to fill the requirement. The Quartermaster of course has possible remedies in mind. The most obvious is further spreading of cloth alternatives. Or, mill operators can be asked to man additional shifts. The Army confidently believes there are enough looms in the country to produce all the cotton cloth it wants. As a last resort it can appeal to the defense commission's priorities board to swing the gate shut a few degrees on deliveries to civilian markets. As it has from the first, Army still insists it will not call for the erection of Government-sponsored textile plants to meet the present emergency. In view of the far more urgent need for munitions plants, it probably will stand on this policy. The matter of emergency plants, however, would be decided by the defense commission.

Reports circulated in Washington that additional quantities of khaki cloth comparable to this latest requisition, would be placed before long. It does not seem reasonable, however, on the basis of estimates which any one can make. Regardless of authenticity, the report is of little importance now, except in that it implies the huge needs or wants, of the Quartermaster, and indicates a rather serious situation. The Army believes that the quantities of cotton cloth called for and contemplated for call are necessary to get troops into summer training. So the whole matter of the short offers of Nov. 5, and any contemplated additional calls, will have to be reconsidered, and the Quartermaster is already so engaged.

Whatever additional purchases the Quartermaster may have in mind, there is no imminent request for additional funds from the 77th Congress, which convenes on the heels of the New Year. The total 1940 textile program, about $350,000,000, is covered by cash appropriations and by contract authorizations. The new Congress will be asked for cash to cover the authorization. New contingencies may arise and any flat statement that no new money will be asked would be fatuous.

NOT SO NEWSY, but negatively important is bidding vs. negotiation. Army's purchases of apparel, including shoes, have gone over to negotiation. Organized labor appealed, through Sidney Hillman of the Defense Commission, for the purchase of textiles by negotiation. The primary object was to incorporate in contracts the Commission rule that the Wagner Act must be complied with. The law provides this can be done in the negotiated type. But William S. Knudsen, production head of the Commission, refused to support Mr. Hillman in his effort to aid labor-law enforcement. The Army, too, says that it will not abandon bidding in textiles unless it gets orders from higher up, meaning the President.

There actually is not much reason for negotiating Army cloth orders. Negotiation is usually resorted to when military secrecy is involved; when highly specialized, non-commercial equipment is wanted; when supply and price situations are abnormal; or when for any reason no bids can be obtained. Textile experts, in and out of Service, say that negotiation in textiles would cause delay and would not lower price. Nevertheless, the Consumer Division of the Commission is known to be supersensitive on prices (that's its job) and it might get the President's ear for its contention that the Government should go "bargain hunting" behind closed doors. There have been several "open market" purchases where bids were not called for, but these should not be mistaken for negotiated orders.

FOREIGN WOOL is now authorized for use in Army uniform cloths, shirtings, blankets, etc., by action of the War Department Nov. 6. It was fast becoming evident that the domestic supply of the necessary grades was becoming so short as to have a markedly bullish effect on prices, and Army authorities were becoming concerned over the situation. Elimination of the preference for domestic sorts now permits bidding on fabrics containing any combination of foreign and domestic wools, or all one or the

other, providing the grade requirements are met. This removes the artificial shortage in the market by which certain domestic grades in the form of tops were 15 to 20¢ a pound higher than foreign of the same grade.

There are no provisions in any of the defense laws against the use of imported wool. But there is the "Buy American Act" of 1933—a depression measure—which authorizes the Secretary of War to exclude foreign products in war procurement. That was the basis on which the Army limited its materials to domestic wool. There is no restriction against foreign wool in the cloth specifications.

As for the wool growers, they probably will make no objection to admission of imported wool for Army orders. They have practically none of the 1940 spring clip still on hand, and are therefore not interested in immediate price elevations. Their representatives are not even in their Raleigh Hotel suite—pulled stakes last month.

While the Army is just beginning its worries about wool prices, the Defense Commission seems to have put an adroit end to emergency wool supply worries for both Britain and the United States. The deal for storage here of 250,000,000 lb. of Australian wool was predicted and outlined accurately on page 61 in the October issue of this publication. The arrangement in full detail has since been announced by the Commission. The deal is unanimously applauded in Washington. It is said that first shipments of the wool are already at sea. This would be the spring clip. Authorities hope to get the whole 40 shiploads over here by March. That would be a man-size chore. Grading takes time, and cargo space is not plentiful.

ANOTHER ACTION by the Defense Commission may soon come to bear on the textile industry. That is the setting up of a Priorities Board, consisting of Knudsen, Stettinius, Henderson, industrial price watchdog of the Commission, and Donald Nelson, defense procurement coordinator, serving as chairman. The Board establishes principles of policy to govern the operation of the priorities systems. It was instituted by the President, upon request of the Commission, which believed that industry wanted Government assistance in the settling conflicts.

The Priorities Board will not act concerning textiles unless and until the War Department asks it to do so. The Commission is an advisory and coordinating agency for supplies, it does not tell the Services what they need. QM officers say that, by proper distributing and the use of specification alternatives, Army textiles can be procured without cutting into the civil population's requirements.

With the Priorities Board serving as arbiter between War and civil and export demands of strategic goods, the Army-Navy Priorities *Committee* continues to function as between those two services. Navy's textile needs are small just now, as compared with Army's.

BOTH ARMY AND NAVY at last are practically independent of silk. This fiber, though it is about out of strategic consideration, still figures strongly in politics. Some Washington observers think people are just coming into a state of patriotic emotion where they would enjoy a boycott on silk. Others say the women would resist. Some observers mention the possibility of Japan herself cutting off silk, but others reason there would be no point in that; it would hurt Japan worse than it would hurt us. Boycott by the Government would be almost an act of war, a pass at Japan's jugular vein. Whether the Administration may see fit to go that far depends on unpredictable developments in Asia. Only one thing seems sure: Uncle Sam is determined to knock the Nippons' ears down if they tweak his beard too much.

Reports from the Air Corps' big laboratory at Wright Field, Dayton, Ohio, and from Irving Air Chute Co., at Buffalo, are that Nylon, subjected to all sorts of weather and service tests during the last year or two, has shown up superior to silk in important respects. Silk now seems essential for only one military item: powder bags for big guns. The Services think they could, if necessary, salvage enough stockings to fight a war, even disregarding their silk reserves, which are large. Also there is a suitable synthetic substitute.

On the subject of silk stockings, a news dispatch from Mexico City says that the Hosiery and Allied Workers Union there has been asked by the American Hosiery Workers Association, to prevent the dumping of 36,000,000 pairs of various grades of American silk stockings on their market. Mexican Federal Labor Department says it will investigate and protect its industry.

INSPECTORS of miscellaneous supplies are needed by the Quartermaster Corps of the War Department in connection with the national defense program. The Civil Service Commission, Washington, D. C., is receiving applications to fill the following positions: Inspector of hats, $2,000 a year; inspector of textiles, $2,000 a year; junior inspector of textiles, $1,620 a year; inspector of clothing, $2,000 a year; junior inspector of clothing, $1,620 a year. The salaries are subject to a 3½% retirement deduction. There are no examinations; applicants are rated on their qualifications as shown in their applications and in corroborative evidence.

This Washington report should not end without mention of the Army's new camouflaged uniforms which make men look like tree bark, leafy plants, or bushes. They say the fighting Europeans haven't anything as good. Tricks are done mostly with printing and applique on uniforms, raincoats, "sniper suits."

Tents are being changed from khaki to olive drab. QM headquarters says there is nothing to the report that khaki color is being abandoned for olive drab in uniform cloth.

Navy has made marvelous use of spun glass cloth as insulation for diving suits, increasing working depth from 260 to 340 ft. To work that deep you need a helium-oxygen mixture to breathe. But helium conducts heat away from the body, chills you. Electrically heated underwear would take care of that. But it might short-circuit and burn you up at the bottom of the sea.

A TRY AT CAMOUFLAGE: The Engineer Corps at Fort Belvoir, Va., is experimenting with a type of cotton cover-all designed to blend a sniper into a background of trees or shrubbery. Others to blend with snow are being tried out.

Harris & Ewing

Fabrics For National Defense

Duck fabrics are among important items needed for equipping conscription army

By JOHN HOYE

No. 4 of a series designed to help manufacturers in production of fabrics for national defense. Previous articles discussed worsted serge, sleeveless summer undershirts, rayon-wool shirting, uniform and herringbone twills, woolen blankets, and knitted woolen lining cloth. Mr. Hoye, author of "Staple Cotton Fabrics," interrupts his series to present this timely article on duck fabrics

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COTTON DUCK, in large amounts, is needed to equip and shelter our first peacetime conscription army. Tents, leggings, gun and instrument covers, tarpaulins, knapsacks, army cots, etc., will be needed in quantity. To meet the need, the army has already purchased approximately 40,000,000 yards of ply-yarn, piece-dyed numbered and tent ducks. Specifications of these fabrics are contained in Federal Specification CCC-D-771a. A digest of general specifications follows:

Material—thoroughly cleaned cotton, free from waste.

Workmanship — shall be evenly woven, without size, and shall be free from imperfections which will affect appearance or serviceability.

Weight—shall be as near standard as practical; no piece shall weigh less than specified square yard weight.

Thread count and ply—may exceed those in tables, at discretion of manufacturer, but shall not be less. Variation from standard adopted by manufacturer shall not exceed plus or minus two threads in warp or filling.

Breaking Strength—averages shall not be less than minimums given.

Sampling—shall be done by lots; a lot shall consist of all duck of same ordered unit, weight, width, type, color, and texture submitted for inspection at the same time. A sample shall be taken from each 1,000 yd. or fraction thereof, except on lots of over 10,000 sq.yd., where not less than 10 samples shall be taken.

Testing—Federal Specifications CCC-T-191 shall be followed wherever practical.

Fastness—good to light and water.

29½ IN., 15.50 OZ. FINISHED. This is the most important tent duck used by the Army. Approximately 4,400,000 yd. has been called for so far.

Finished specifications:

Width—29½ in. plus or minus ¼ in.

Weight—15.50 oz. sq.yd., minimum.

Color—khaki or olive drab, as specified.

Pieces—single cuts of 50–65 yd.; double cuts of 80–130 yd.

Finish—water repellant by treatment with soap, wax, and sulphur-free aluminum acetate.

Strength—(1 x 1 x 3 grab) 230 lb. warp and 180 lb. filling, minimum.

Thread count—46 x 32 minimum, 2-ply yarns w & f.

Weave—plain.

[Approximate gray construction (not given in specification) necessary to meet finished specifications: 30½ in. width, 46 x 34, 11/3 warp, 12/3 filling, and 13.65 oz. linear yd.]

28½ IN., 9.85 OZ. FINISHED. This fabric is the same as the widely-used standard clothing duck. Almost 1,000,000 yd. has been ordered.

Finished specifications:

Width—28½ in. plus or minus ¼ in.

Weight—9.85 oz. sq.yd., minimum.

Color—khaki or olive drab, as specified.

Pieces—single cuts of 50–65 yd., double cuts of 80–130 yd.

Finish—highly water repellant by treatment with soap, wax, and sulphur-free aluminum acetate.

Strength—(1 x 1 x 3 grab) 160 lb. warp and 95 lb. filling, minimum.

Thread count—49 x 31 minimum, 2-ply yarns w & f.

Weave—plain.

[Approximate gray construction (not given in specification) necessary to meet finished specifications: 30½ in. width, 50 x 40, 14/2 warp, 14/2 filling, and 8.42 oz. linear yd.]

Photo by U. S. Army Signal Corps.

Many tents such as these will be needed in training conscriptees.

36 IN. 10.2 OZ. FINISHED. This fabric is constructed with slightly higher thread counts than standard Army duck. Approximately 1,800,000 yd. have been called for to date.

Finished specifications:

Width—36 in. plus or minus ¼ in.

Weight—10.2 oz. sq.yd. minimum.

Color—vat-dyed olive drab.

Pieces—30 yd. or longer.

Finish—highly water repellant by treatment with petroleum, wax and copper stearate.

Strength—(1 x 1 x 3 grab) 150 lb. warp and 90 lb. filling, minimum.

Thread count—52 x 42 minimum, 2-ply yarns w & f.

Weave—plain.

[Approximate gray construction (not given in specification) necessary to meet finished specifications: 38 in. width, 52 x 44, 13/2 warp, 13/2 filling, and 11.25 oz.]

33 IN., 7.90 OZ. FINISHED. This is a closely-woven, finer-yarn duck used for shelter or "pup" tents. Because of its close weave, it is very resistant to water penetration. Bids have been invited on 3,360,000 yd.

Finished specifications:

Width—33 in. plus or minus ¼ in.

Weight—7.90 oz. sq.yd., minimum.

Color—vat-dyed olive drab.

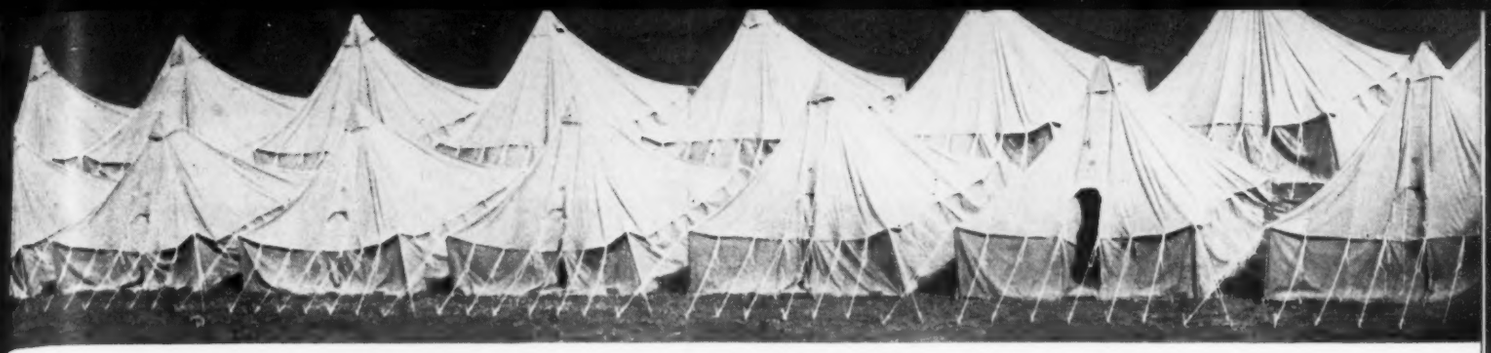
Pieces—double cuts of 80 to 130 yd. with percentage discount for all lengths under 80 yd.

Strength—(1 x 1 x 3 grab) 125 lb. warp and 115 lb. filling minimum.

Thread count—62 x 54 minimum, 2-ply, yarns w & f.

Weave—plain.

[Approximate gray construction (not given in specification) used: 35½ in. width, 60 x 60, 22/2 warp, 22/2 filling, and 8.25 oz.]



Dyeing Military Fabrics

Use of sulphur and mineral colors to produce olive-drab and khaki shades

By JOHN T. GIBBONS

DURING THE WORLD WAR sulphur and mineral colors were used extensively for producing olive-drab, khaki, and blue shades on cotton fabrics for military use. Some of the present Army and Navy specifications call for use of vat dyes; others merely state that the color shall have "good fastness" to light and washing when tested in accordance with methods prescribed in Federal Specification CCC-T-191a. Selected sulphur and mineral dyes yield shades which withstand these fastness tests, and are again finding application in dyeing cotton duck and other fabrics which are not required to be dyed with vat or other specified classes of colors.

Dyeings on cotton produced with mineral dyes are very fast to light and washing. Mineral dyes tend to make the cloth harsher; therefore, they ordinarily are not used for clothing fabrics; but find their greatest use in dyeing tent cloth, tarpaulins, etc.

There are two methods of dyeing with the mineral colors. In one method the pigments are ground with water and a carrier, such as potato dextrine. A bath is made up with this material and the cloth impregnated, leaving the pigment deposited directly on the fiber.

The other method is to impregnate the cloth with the soluble salts of the metals necessary to obtain the required shade, and, after drying, to reduce the salts by passing the fabric through caustic soda and soda ash, thus leaving the pigments thoroughly fastened to the fiber.

As an example of this method the following procedure can be used to obtain a medium khaki shade: The first bath consists of 24 gal. acetate of chrome, 8½%, 48 gal. black iron liquor conc., and 114 gal. water. This is mixed and applied cold or at normal room temperature. In order to get proper penetration, the liquor should be applied in a padder, giving four nips and four dips. With heavy fabrics it is helpful to use one of the common penetrating agents. After passing through this bath, the cloth is dried over dry cans which are wrapped with cloth to obtain uniform drying and prevent mottling.

Following the above dyeing and drying operations, the goods can be allowed to lie for short time to age and then are passed into the following bath at the boil: 30 lb. soda ash, 7½ lb. caustic soda, and 100 gal. water. This bath should be used in three boxes of a six-box soaper; the last three boxes should contain water at the boil, which will remove any alkali left after the reaction has taken place. The cloth is then ready to be dried again and framed to width.

The method of matching shades is practically the same as in other methods of dyeing. Patches of the cloth are immersed in the liquor and passed through the padder rolls, then reduced in the alkaline mixture and dried. The constituents of the liquor are changed until the correct shade has been obtained. Then a small piece of the cloth is run through the padder to check on the shade, and, if it is correct, the lot is run.

SULPHUR COLORS. Most dyers are familiar with the application of sulphur colors, and, there is no necessity, therefore, for discussing this method in detail. There are, however, a few precautions which should be mentioned.

It is essential, in the first place, to use sufficient sodium sulphide to reduce and dissolve the color completely. If an insufficient amount is employed, particles of the dye will remain undissolved and will cling to the surface of the cloth. The amount of sodium sulphide required varies with different dyes and with the type of dyeing machine used, and must be determined by experiment or experience. In addition to sodium sulphide, soda ash is employed in dissolving sulphur colors in order to increase the alkalinity of the solution. Some dyers prefer to mix the dye and the soda ash and then paste the mixture with water before the sodium sulphide is added, as this serves to neutralize any acidity of the color. Since many sulphur dyes do not exhaust readily, addition of considerable quantities of salt to the dyebath is needed, especially when dyeing heavy shades.

Sulphur dyebaths are quite stable on standing. However, some of the sodium sulphide may become oxidized, allowing precipitation of the dye. Any such precipitate can be brought into solution again by addition of more sulphide solution. Practically all sulphur colors can be dyed at the boil, but the writer prefers a slightly lower temperature of about 200°F. If it is necessary to brighten the shade slightly, basic colors, rather than direct colors, are preferred for shading.

The type of machine chosen for dyeing sulphur colors depends on the equipment available and the size of the lot to be run. Jigs used ordinarily are the usual ones, with the exception the rolls must be of iron or other metal which will resist the action of the alkalis present. Better results are obtained if the cloth is immersed in the liquor during the process and air is excluded. Sometimes two jigs are run in tandem—one jig for the dyeing; the other for the washing. Heavy fabrics are frequently scoured and bleached (if necessary) on the jigs before dyeing. This procedure avoids formation of creases and wrinkles which might be formed if the goods were kier-boiled.

Continuous machines are ordinarily employed for long runs. The padder section should be so designed that the cloth remains submerged in the dye liquor and is not alternately dipped into the dyebath and exposed to air.

Dinner Honors Textile Educator

Graduates of Philadelphia school hear discussion of Army textile procurement

NEARLY 350 former students of Philadelphia Textile School paid homage to Professor Bradley C. Algeo for his long service to textile education, at a banquet held Oct. 18 in Philadelphia. Mr. Algeo was president of the School's Alumni Association for 39 consecutive years, from its founding until he declined to stand for re-election earlier this year. Chief speaker at the banquet was Lieut.-Col. Vere Painter, Q.M.C., who discussed army textile procurement practice.

Lewis A. Hird, of Samuel Hird & Sons, Inc., presented Mr. Algeo with a check for $1500.00 on behalf of the Alumni Association. Brief talks were also made by a number of other men prominent in the textile industry or textile education. Clarence L. Ederer, president of the Association, was toastmaster.

In the course of his talk on textiles for Army use, Lieut.-Col. Painter said:

"It has been the history of this country that we never prepare for a war until we get into it. This emergency is no exception to the rule. We have been recommending for five years, to my knowledge, the procurement of sufficient stocks of clothing and textiles to take care of the first six months of a major emergency. These recommendations have not obtained the desired stocks and we came into this emergency in our normal, unprepared condition, insofar as stocks are concerned.

"In June of this year our stocks of standard items of clothing and textiles were so low as to be almost non-existent. The Army appropriation for the fiscal year 1941 was approved in June, and our procurement program got under way. We purchased at that time 10,500,000 yd. of woolen and worsted fabrics for delivery in five months and 1,000,000 blankets for delivery in four months. This cloth is now being delivered at the rate of 1,000,000 yd. per week and the blankets have all been delivered. Since June we have increased our purchases of woolen and worsted fabrics to 20,000,000 yd., with another 17,000,000 yd. now being purchased, and have purchased a total of over 4,000,000 blankets. In addition to our purchases of wool cloth and blankets, large quantities of knitted clothing have been purchased and 30,000,000 yd. of cotton goods have been contracted for. In addition to the purchase of cloth, large contracts for the manufacture of clothing have been made and garments are beginning to be delivered.

"You may wonder how we have been able to organize our force to handle such a large procurement in such a short time. However, we have been preparing for this for a long time; officers have been trained in technical duties at the textile schools and others in procurement duties at the Army Industrial College and other schools, such as Harvard School of Business Administration.

"Branch textile inspection offices were established in Lawrence, Mass. and Pawtucket, R. I., as these were centers of large production. Competent textile inspectors were employed and within one month after the first big purchases were made, textile inspection was functioning fairly well and today is running as smoothly as could be expected; we hope to keep it that way.

"It is inevitable that in such large purchases as we have been making some bottlenecks would develop, especially in those cases where we want the supplies the day before we buy them.

"Some of the bottlenecks of which I speak are scarcity of wool, the lack of certain types of knitting equipment, a shortage of twisting equipment to make plied cotton yarns and the limited number of duck looms.

"The use of substitutes for wool has been studied for a long time and we are ready at any time to put these plans into force. Substitutes for standard knit fabrics have been specified and that bottleneck cracked. Experiments are now being made to get away from plied yarn in some of our duck requirements and to design a suitable fabric that can be woven on other than duck looms.

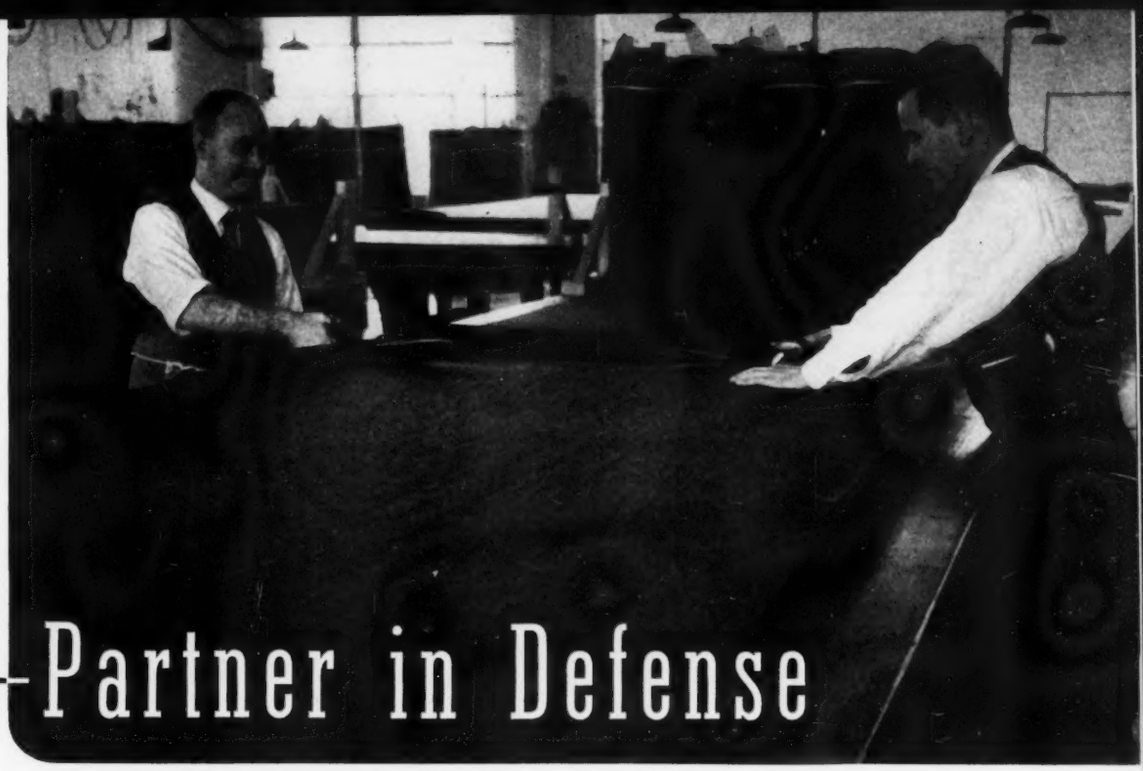
"During past wars there has always been a lowering of standards to such an extent that before the war was over the Army fabrics were very poor examples of the textile art. It is our duty to see that this does not happen again. We are not averse to lowering our standards to meet actual military requirements, but we must insist upon maintaining standards as long as possible, and only using substitutes as a last resort and then only as long as absolutely necessary."

Banquet photos by Franklyn Weiss

Lieut-Col. Vere Painter, Q.M.C., was chief speaker at the banquet

Bradley C. Algeo, who was honored for long service to textile education

M. Earle Heard, Philadelphia Textile School dean, addressing banquet guests



Canada is chewing up large quantities of khaki cloth from its textile mills to clothe its fighting forces

Canada—Partner in Defense

A few impressions obtained during an editorial trip north of the border

By DOUGLAS G. WOOLF

A VISIT TO CANADA is always thrilling. To most citizens of the United States, Canada means the city of Quebec, with its old-world flavor, or the unbelievably beautiful trip up the Saguenay, or a pilgrimage to the Evangeline country, or the glorious motor-route around the Gaspé Peninsula.

But in this year 1940, Canada means much more to us in this country. It means our second line of defense, second only to Great Britain. It means, still more, the one nation in this hemisphere to which we are really akin. Important as is the Pan-American movement, signifying our mutuality of interests with those of the countries South of the border, our relations with the country north of the border are far more pregnant with imminent significance. That fact has been recognized by both Governments through the appointment of a joint defense commission.

And so this writer considers himself particularly fortunate in having been one of a group which visited Canada last month under the auspices of the National Conference of Business Paper Editors. The group met with practically all the leaders of the Canadian Government: the Prime Minister, most of the Ministers who make up the Cabinet in Canada, and men from all important administrative agencies.

This writer formed these conclusions:

1. Canada is "in the war," with both feet. All its people, whether of British or French or other extraction, are united in a common cause. That was the principal question we wanted answered. We wondered what the defeat of France, with its subsequent antagonisms, meant to French Canadians. We found that it meant a closer bond to all other Canadians: a more determined effort to pool all resources toward the defeat of the Dictator States. That, to us, is of primary significance. Whatever lines of cleavage may have existed in Canada before are now sealed even more completely than they were in the First World War.

2. If Great Britain can hold out for one more year—and every Canadian *knows* she can—Canada will be a tremendous force toward final victory.

3. Even under war-time conditions, Canada continues to function as a complete democracy. While we were in Ottawa, editorials appeared in leading Canadian newspapers analyzing and criticizing the war policy. The basic rights are still extant in Canada—just as powerful as they are in this country in this time of so-called peace.

4. The United States has a profound influence upon Canada. Our Governmental policies find an echo in Ottawa. The rise or fall in our business indices has almost as direct an effect upon Canadian economics as it does here. We have a Big Brother status in Canada—"big" referring largely to the approximately 10 to 1 ratio of our population, resources and income.

5. Canadian Government officials do not resent our not being "in the war." On the contrary, the prevailing opinion among them seemed to be that the United States is actually of more help to the cause of Great Britain and Canada as a neutral than as a combatant. Some pointed out quite frankly that one effect of our entrance would be a natural tendency to regard our own war needs as No. 1, with possible impairment of our help to Great Britain. The majority opinion was that we can best help the cause by doing "just what we are doing now" . . . It must be pointed out that this thoughtful view is apparently not shared by many of the Canadian people who have displayed to travelers from this country a definite resentment at our failure to take active part in the fight against the dictators.

6. Business is certainly not in the "dog-house" in Ottawa. Instead, it rates very high in Government Councils. Not only have many of the Cabinet Ministers themselves come from the ranks of industry or the professions, but great numbers of dollar-a-year men, loaned by their companies, are carrying a substantial part of the administrative burden throughout all the Government agencies. The high type of these men impressed us tremendously. It is one of the best promises for successful prosecution of Canada's share in the war.

7. The closer relationship between Canada and the United States, induced by mutual defense interests, will not disappear after the war. The two countries will have found a need for, and a hope in, a closer working arrangement as a permanent feature. They supplement each other so perfectly in so many ways that such an outcome is a most logical one. This is the most encouraging thought this writer brought home from Ottawa.

D13 Holds New York Meeting

Textile testing group hears papers on abrasion, strength, and wear tests

COMMITTEE D-13, textile branch of the American Society for Testing Materials, held its 1940 fall meeting in New York on Oct. 16–18. During the period numerous sub-committees devoted their attention to particular problems; a paper session was held at which abrasion testing, tensile-strength-testing machines, new synthetic fibers, and consumer tests on rayon fabrics were discussed; and a session on glass was conducted, with Games Slayter, Owens-Corning Fiberglas Corp., speaking on "Fiberglas," and Dr. George W. Morey, Geophysical Laboratory, Carnegie Institution, talking on "Glass Other Than Fiberglas." A business session of the committee as a whole, at which reports of subcommittees were presented and several changes in specifications recommended, brought the meeting to a close. Prof. H. J. Ball, who presided at this session, announced that Committee D-13's next meeting will be held in March, 1941, in Washington; that the Annual Meeting will be held in June, in Chicago, and that the meeting in October next will again be held in New York.

Among changes recommended and specifications proposed were a method for testing tubular braid; a change in thickness tolerances for glass tapes; a method for determining the commercial weight of spun rayon yarns; recommendations for revision of tests of staple fibers; and suggested changes in fastness to light, laundering, and domestic washing test methods.

First speaker at the paper session was Arthur Russman, of Howard Mfg. Co., whose topic was "Correlation Between Laboratory Abrasion Tests and Service Life of Men's and Women's Outerwear." Mr. Russman outlined a procedure developed by his company to produce in the laboratory wear tests which closely approximate the wear received by a garment in actual service. He also described a method of rating fabrics on the basis of calculations taking into consideration number of rubs required to rupture yarns in the fabric and length of the season during which the garment would normally be worn.

The speaker pointed out that it is difficult with ordinary wear-test procedures to reproduce wear such as results at cuffs, pockets, edges, and other similar portions of a garment. After considerable experimentation, it was found possible to produce a laboratory result comparable to that resulting from actual wear. This was achieved by folding the test sample in the shape of an S, and inserting the cloth in the machine in this shape. In making observations of samples under test, only the edge of the S shape is examined. This edge, it is said, closely resembles cuff and other similar edges already mentioned.

Mr. Russman said that if a test sample showed resistance to abrasion which indicated it would wear longer than what is considered an average season for that type of cloth, it is rated good. A sample which tests show will just last for an average season is rated fair; and one which tests less than one season's wear is called poor.

"**COMPARISON** of the Breaking Strength of Fabrics as Determined by the Pendulum and Incline Plane Testing Machines," the second paper presented, reported tests made by Gladys White and Emma C. Peterson, of the Division of Textiles and Clothing, Bureau of Home Economics, U. S. Dept. of Agriculture. The paper was presented, in abstract, by Miss White, who stated the tests were "an attempt to find a statistical method of controlling variations in breaking strength rather than to search for possible improvements in machines.

"As shown by an analysis of variance, the breaking strength determination of one fabric was significantly different when made on the two machines and in seven others the difference was highly significant. These fabrics included silk tussah, wool crepe and flannel (both warp and filling strength), acetate and combination acetate-viscose rayons, and rayon fabric with yarns made by the cuprammonium process. For each of these fabrics the mean of 32 observations per machine differs by approximately 1 to 2 lb., except the tussah silk where the difference between means is only 0.2 lb. In all except the acetate rayon the incline-plane values are higher than those of the pendulum. The percentage elongation as measured on the incline plane ranged from 16 to 65 for the eight fabrics.

"Results of the experiment show that differences between the pendulum and incline plane machines are significant for some fabrics in the region from 20 to 50 lb. (the region used in these tests). Most fabrics with machine differences had large values of percentage elongation and their mean breaking strength values were higher on the incline plane than on the pendulum machine. In general, however, the total variation in the strength of fabrics did not vary greatly between the two types of machines. For many practical purposes the two machines might be used interchangeably.

"A fairly large number of samples would be required from many fabrics in order to determine the breaking strength within 1 lb. 95% of the time. This indicates that the five samples required in breaking strength determinations by the American Society for Testing Materials may not be sufficient for specification purposes in all cases."

"New Synthetic Fibers" was the topic of Herbert R. Maurersberger, technical editor of *Rayon Textile Monthly*, whose paper discussed the characteristics of Nylon, Vinyon, casein, and other synthetic fibers.

"**RESULTS OF TESTS** of Relative Merit in Actual Consumer Service of Four Rayon Fabrics Used in Slips," were discussed by Alexis Sommaripa, E. I. du Pont de Nemours & Co. Mr. Sommaripa described methods of making tests, and presented data covering a series of tests recently completed. The objects of such testing, he said, are: (a) "To permit a rough quantitative comparison of the life span of two or more fabrics; that is, to show under reproducible conditions the number of units of wear that result in the fabric being no longer wearable. (b) To record the types of deterioration operating to bring about a worn-out condition. The knowledge of the types of deterioration," he said, "is to be used as a guide in developing fabrics with greater resistance to such deteriorations as well as to investigate the value of laboratory tests to forecast fabric resistance".

The ladies-in-waiting crowd around Anne Rutherford (center), goodwill delegate from Hollywood, guest of honor at a dinner given at the Poinsett Club for members of the Court by Miss Beattie (second from left)

The king and queen, followed by members of the Court, step from the dais to begin dancing of the Cotton Ball

Proud father W. H. Beattie (left) poses with daughter Dot, queen of the festival, Luther Marchant, king, and Maj. G. Heyward Mahon (right), one of the original organizers of the affair

A parade many miles long heralded the official opening of the Greenville Cotton Festival

Greenville Holds Cotton Festival

THE HUGE ROOMS of Textile Hall echoed last month with music and laughter, sparkled and glittered with pomp and ceremony as Greenville, S. C., celebrated its second annual National Cotton Festival. This year, the festival was much larger and better planned than before, and most of the aches and pains which came with its original presentation were missing.

Features of the festival were: a mammoth parade of floats depicting the importance of cotton; free acrobatic and animal circus acts along the streets; a children's parade; coronation of both an adult and a child king-and-queen of the festival; a huge cotton ball with music furnished by Ben Bernie; a "Cotton Jubilee" consisting of a musical extravaganza and style show; attendance by Anne Rutherford, movie actress. The Cotton-Textile Institute furnished a large cotton-products exhibit and cooperated in putting on the style show.

At the coronation ceremony, Luther Marchant, son of the late Luther Marchant, cotton broker, was crowned king of the festival, and Miss Dot Beattie, daughter of W. H. Beattie, vice-president of Woodside Cotton Mills Co., was made queen. Names of many of the members of the Court are prominent in Greenville textile circles.

Officers of the National Cotton Festival, Inc., are as follows: L. P. Hollis, president; Hugh Aiken, John W. Arrington, Jr., James T. Greene, G. Heyward Mahon, Jr., H. T. Mills, John I. Smith, vice-presidents; Brown Mahon, treasurer; L. M. Glenn, executive secretary.

Innovation at Chemists' Meeting

Was inter-sectional contest at which Rhode Island Section won top award

SEVERAL INNOVATIONS in the program contributed to the success of the 20th annual meeting of the American Association of Textile Chemists & Colorists, held Oct. 18 to 20, in New York. Foremost among the events of the meeting was an inter-sectional contest, at which the Rhode Island Section won first honors for presentation of a paper on the effect of modern finishing agents on the light fastness of cotton colors. Other features included two symposia—one on chemical and dyeing aids, and the other on evaluation of properties of finished textiles; the annual banquet; and a luncheon meeting on Sunday at the World's Fair. Over 1,000 members and guests of the association attended the meeting, which was held under the auspices of the New York Section.

In the paper presented by the Rhode Island Section and read by William H. Cady at the inter-sectional contest on Friday afternoon, it was pointed out that many of the new cation-active finishing compounds accelerate the fading by light of direct, Indigosol, and sulphur dyes; but not that of naphthol and vat colors. Apparently, a salt-forming reaction occurs between the finishing agent and the dyes, and the resultant salts are less fast to light than are the original dyes. Of nineteen different cation-active compounds studied, some caused much greater acceleration of fading than did others. Addition of a small amount of an anion-active compound to the finishing bath results in less fading.

Second prize went to the Southeastern Section for a paper read by Prof. Alfred R. Macormac on the tendering of vat- and naphthol-dyed army duck on exposure to weather. Samples of cotton gray goods and vat- and naphthol-dyed fabrics were exposed to weather for four months during summer, following which they were tested for breaking strength and examined visually to determine percentage of light fading. It was found that badly faded samples of vat-dyed fabrics lost as much as 50% of tensile strength as compared with 20% for undyed samples. Some naphthol-dyed fabrics faded badly, but suffered less tendering than some vat-dyed samples. Fading in excess of 15 to 20%, regardless of the color used, results in a greater loss in strength than occurs in gray goods.

Third prize was awarded to the Philadelphia Section for a paper read by Charles A. Seibert on variables encountered in Fade-Ometer testing. It was shown that whereas only 36 samples can be exposed simultaneously in the Fade-Ometer when the conventional metal frames are employed, up to 180 samples can be used if they are mounted on cardboard. Results of the two methods are comparable; but must be correlated, as, in general, fading proceeds more rapidly when the samples are attached to cardboard.

Outstanding from the standpoint of popular interest was a paper presented by the Northern New England Section and read by Henry D. Grimes on "What Is New in New England." Recent textile developments discussed and illustrated included screen printing of mohair plush; large-scale weaving of Fiberglas fabrics, introduction of fixing salts to prevent bleeding of dyes, the Drapemeter for evaluating draping properties of fabrics, the Factag, the Frosted Wool process, the Derby dry-cleaning machine, electrolytic weaving, apparatus for measuring effect of fiber lubricants, the Hardy spectrophotometer, and fluorescent lamps for textile mills.

INFORMATIVE LABELING. Also of exceptional general interest was the paper presented by the New York Section and read by Henry F. Herrmann on informative textile labeling. This paper traced the development of textile labeling, pointed out the growing demand by members of consumer groups for factual labels, discussed the benefits to the textile industry of a sound labeling program, and suggested the setting up by the A.A.T.C.C. of a committee to interpret scientific tests and establish terms which might become the basis for informative labeling of textiles.

Development of hosiery processing in the South was outlined in a paper presented by the South Central Section and read by Walter E. Hadley. More recent developments mentioned included processing of Nylon hosiery, trend toward use of cation-active softeners for finishing, increased application of sulphated alcohols in scouring and dyeing, growing demand for vat-dyed hosiery to meet Army requirements, and use of specially prepared chlorine compounds for bleaching cotton and rayon hosiery.

Another phase of hosiery dyeing—an analysis of the split-bath method of dyeing silk hosiery—was considered in a paper presented by the Midwest section and read by Archie S. Alexander. The split-bath method was described as a happy medium between the two-bath and the one-bath methods, giving superior results as far as appearance of the hosiery is concerned. The pH at which the silk is soaked, as well as the pH of the water and the degumming and dyeing baths, is of importance. A high pH is necessary to give good degumming, but in the second split the pH should be lower to prevent damage to the silk. Experiments with ten types of soap to determine the minimum percentage required indicate that strong solutions are needed for level dyeing.

For the Piedmont Section, William Wohlar presented a motion picture showing the method employed at Rosemary Mfg. Co. for screen printing of cotton fabrics.

DYEING AND FINISHING. First speaker at the symposium on dyeing and finishing aids, held Saturday morning, was Ralph L. Ericsson, of Warner Chemical Co. Mr. Ericsson described a new process for shrink-proofing wool by means of bromine. Preliminary experiments indicate that hosiery made from worsted yarn which has been brominated shrinks only 1.9% on dyeing and 2% on fulling, against 6.8% and 15.5% shrinkage, respectively, for hosiery knit from untreated wool. Use of a specially designed brominator permits the process to be carried out in a Franklin process package dyeing machine under controlled conditions of temperature, pH, and bromine concentration with minimum effect on tensile strength.

Properties and uses of tetra sodium pyrophosphate were discussed by Paul Logue, of Monsanto Chemical Co. Important properties include high pH of solutions (pH 10.2), water-softening power, peptizing effect, and ability to

solubilize iron salts. Among present applications are in kier boiling of cotton piece goods to increase absorbency of fabrics; in peroxide bleaching to solubilize iron stains; in dyeing naphthol and direct colors to reduce crocking; in dyeing sulphur and vat colors to provide brighter and clearer shades; for cleaning dyeing machines; in degumming silk to prevent scum marks and gum spots; and in scouring and dyeing viscose, acetate, and Nylon.

Results of research on dyeing of Nylon with acid colors were reported by P. H. Stott, of E. I. du Pont de Nemours & Co. Characteristics of acid colors which influence their use for dyeing Nylon include the saturation point, speed of exhaustion, and relative affinity from a neutral bath. A classification of acid colors based on these properties has been made to permit selection of those dyes which are most suitable for producing combination shades. In general, dyes should be selected which coincide as nearly as possible in these three properties. In applying acid colors to Nylon, the total concentration of the bath should be no greater than that of the dye having the lowest saturation point. Dyes having a high relative affinity from a neutral bath should not be used with those having a low relative affinity if well-penetrated level dyeings are to be obtained.

Use of surface-active agents in degumming silk hosiery was considered in a paper presented by O. M. Morgan and H. Seyferth of National Aniline & Chemical Co. Experiments made in degumming and dyeing hosiery with the use of alkyl aryl sodium sulphonates and suitable alkalis (sodium sesquicarbonate and sodium silicate) as the degumming agents gave excellent results as regards handle, wear performance as judged by Frazier machine tests, dye yield, and lowering of degumming costs.

Microscopic observations of phenomena encountered in wool dyeing were discussed and illustrated in a paper presented by G. L. Royer and H. E. Millson, of the Calco Chemical Division, American Cyanamid Co. This paper, which was a continuation of the one given last year, constituted a report of more recent work and emphasized the value of microscopic examination of wool dyed with fluorescent colors.

TEXTILE TESTING. At the symposium on evaluation of the properties of finished textiles, also held on Satuday morning, talks were given by Dr. Erwin J. Saxl, Saxl Instrument Co., Providence, R. I.; Ruth E. Slabaugh, University of Illinois; Prof. Alfred R. Macormac, Alabama Polytechnic Institute; K. H. Barnard, Pacific Mills, Print Works Division, and George A. Slowinski, E. I. du Pont de Nemours & Co.

Dr. Saxl discussed the desirability of a system for more easily checking progressive destruction of fabrics due to abrasive wear. He illustrated a porosity tester which makes it possible to check one sample throughout its entire wear-life test. The value of the black carpet beetle as a means of testing the effectiveness of mothproofing agents was discussed by Miss Slabaugh. Professor Macormac presented a new technic for testing fire-proofed textiles and demonstrated the use of a testing apparatus developed in collaboration with Emily W. Akin, a graduate student at Alabama Polytechnic Institute.

K. H. Barnard, chairman of committee on crease resistance and permanence of finish, reported on that committee's work in developing the Drapemeter, an instrument for evaluating the hand of fabrics. Evaluation of water-resistant finishes and tests for measuring hydrostatic pressure resistance, absorption resistance, and surface repellency were discussed by Mr. Slowinski.

Speakers at the annual banquet held Saturday evening in the Hotel Commodore were Carl Z. Draves, president of the association; H. L. Derby, president of American Cyanamid & Chemical Corp.; "Senator" Edward Ford; Dr. C. T. Murchison, president of Cotton Textile Institute; and Lieut. Col. Vere Painter, Quartermaster Depot, Philadelphia. Elvin H. Killheffer, past president of the association presided.

Final event of the meeting was the luncheon on Sunday at the National Advisory Committee's Bldg. at the World's Fair.

Group at speakers table at luncheon meeting held at New York World's Fair: standing is Carl Z. Draves, president of the association; others left to right are Dr. J. E. Meili, chairman of the New York Section: Miss Meili: Prof. Louis A. Olney, president emeritus: Walter S. Williams: and Dr. Walter M. Scott, chairman of technical program committee.

Young Men in Industry

Given an opportunity to show initiative through the "Multiple-Management" plan

By CHAS. P. McCORMICK
President, McCormick & Co., Baltimore, Md.

THE PHILOSOPHY of "Multiple Management"* can be used in any industry where people work together and must have harmony and peace in order to succeed. While not a cure-all, it is a definite plan toward doing something about the existing feeling of unrest between Capital and Labor.

Realizing full well that the question of employer-employee relationships had to be studied seriously and some plan worked out, Multiple Management was originated and tried out as an experiment. We were interested in a small way, in our own business, to see if we could not produce a plan whereby the "young man" in business, the "worker in the factory" and the "salesman on the road," all would have a proper share of the responsibility and all might participate in profits that might accrue in excess of the proper cost of running the business.

Our first step was to organize a Junior Board of Directors. We gave it a high-sounding title because we intended to give its members full responsibility next to the Senior Board of Directors. The senior board members are the trustees of the business and are directly responsible to the stockholders. The junior board (all eligible for the senior board) is a group of the creative-thinking type, selected regardless of age, creed or affiliation.

These seventeen men were given the task of appointing from their number a chairman and a secretary to serve for six months; they were allowed to discuss, criticize and do anything they desired, but ultimately to report anything on which they agreed unanimously. Their recommendations could not be carried out by the junior board, but could be put into force by the stockholder's (senior) board or the president of the corporation. These two minimizing clauses or restrictions prevented the ultra-radical or ultra-conservative viewpoint from becoming the main or guiding spirit of the body. It allowed the young man to express his viewpoint at a closed meeting among his contemporaries, without any representative of management sitting in.

A prominent man once stated that young men are all radicals and would wreck a business, but after five years of constructive work the suggestions *unanimously* approved by this junior board numbered 2,109 and only six of these were turned down by the senior board. I wonder whether the senior boards of many of the leading corporations have made that many. It matters not whether a man is 50 or 20 if he has merit. Merit alone should decide whether or not he will go on the boards or be an advisor or partner in thinking in your business.

It is important to see that the members of the junior board stay unselfish, and for this purpose we have a plan whereby each of these juniors sponsors an incoming "entered apprentice" for a period of two months. These sponsored and spirited young men are taught the philosophy of Multiple Management; they are corrected when wrong and are led wisely, just as an older brother would do. This creates new prospects for the junior board (in addition to the older men who have not made the board) to be elected at the next meeting six months later. In order to keep it from becoming a perpetual political organization, three men must be removed from the junior board every six months and three new members elected to fill their places, so that at the end of the six months the same three men who were dropped can, if they merit it, be put back on the board for the next six months.

Our theory is that young executives on the junior board and the more mature executives on the senior board when they work together as a unit toward a common viewpoint are invincible. Certainly there is every advantage to be gained by throwing younger and older men together, for what one lacks the other has. The combination of the two makes an ideal human relationship in any field of life.

If management will realize that every young clerk is a potential manager of a business of tomorrow, the relationship changes. It will be quite different from just looking at a "hired" person who is being employed by the day at a fixed price and is expected to turn out so much work.

Of course, Multiple Management goes further than the junior board of directors. We applied it to the factory people, factory people only being nominated and elected to the Factory Board of Directors. Here again the managers of the corporation have nothing whatever to do with the thinking of the factory board. In reality, back in 1932, we had what one might term today "collective bargaining" for the factory people. They tackled and settled the problem of wages, hours and conditions, and one by one each was cleared up satisfactorily in keeping with the profits of the business. We have today—and I say it humbly—a guarantee of 48 weeks work (including a week's vacation with pay), a five-day, 40 hr. week, and a minimum wage of 40c. an hour to the humblest employee.

We are happy to say that the factory board has enabled us to cut our overhead over 10% in less than five years. They also stepped up production without any piecework, without sweatshop conditions, over 34%. We gave them higher wages than in 1929—but we gave *first* you see—then they returned much to us. It is not much fun to be forced by law to give.

There is also a Sales Board of Directors controlled by leading merit salesmen on the road, appointed each year, to give new life, new viewpoint and new methods to the merchandising, selling and advertising field. There are ten of these men elected by merit and ten inside executives on that board. They meet twice a year for a week at a time and outline the policies of the firm. Here you have the outside viewpoint expressed, not over-dominated by the inside viewpoint.

The final culmination of these three boards is illustrative of the fact that "forty heads are better than one." I was interested in calling in every available thinking person in the business and making him a part of it, not in the theories, but in actual practice. Hence, the final step in such a plan was the working out of a profit-sharing method so that when profits were made they would be distributed throughout the entire organization in proportion to everyone's participation in the business. That is, we distribute profits in excess of the needed capital, taxes, dividend payments, surplus for future needs, etc.

Incentives to Americans are necessary for any industry to consider today, for every worker should have the opportunity, through merit only, to advance as rapidly as possible.

*From an address before the annual convention of the Southern Hosiery Manufacturers Association held recently at Asheville, N. C.

Newest Fabrics on the Road

Automobile Show discloses modern car more than ever a "living room on wheels"

Interior view of a 1941 Buick, showing the darker upholstery in seats and lower panels and lighter materials for sides and roof

A FABRIC-CONSCIOUS CROWD thronged the 41st annual National Automobile Show at the Grand Central Palace, New York, from Oct. 12 to 20. Not only were the fabrics in the car interiors more luxurious and harmonious than before, but concurrent style shows were held in which mannekins featured costumes designed to blend with particular car interiors, and other mannekins showed themselves in coats made from precisely the same fabrics as those used in the car upholstery. The general public seemed to respond to the effort which designers had expended to make the interior more than ever a "living room on wheels." The furnishing familiar in fine cars has been brought into medium and lower priced lines.

The one newest touch in automobile upholstery disclosed at the recent show is the use of a two-tone effect on the inside of the car as well as on the outside. In many models the outside finish was done in darker color below the belt line and a lighter color above. Similarly within, the upholstery for seats was often done in a dark shade, while the door and side panels and the ceiling were in lighter, plainer material.

In general patterned fabrics for seat upholstery focused upon herringbones and stripes, while percentage of plain fabrics was large. The following list of colors found in leading models gives an idea of the diversity: Ember, pigeon gray, pilgrim gray, pebble tan, sand tan, moss green, frost green, terra cotta, madeira red, Hula blue, and Cheerio green. A popular cloth was Canda, made by Collins & Aikman, first introduced last year, and now found on ten of the eighteen makes shown.

Among the highlights of the individual exhibits were the following:

Ford: A chevron pattern mohair, a striped combination of bedford cord and broadcloth, and broadcloth alone. In Mercury were broadcloths and corded material. In Lincoln, broadcloth.

Studebaker: Solid color broadcloths in two-tone style, using sky blue for the seats and gray for sides and ceiling.

Buick similarly stressed broadcloths and corded fabrics.

Cadillac used both plain and striped broadcloths and bedford cords.

Pontiac used fine bedford cords and flat wool fabrics.

Chevrolet showed striped effects and plain materials.

Chrysler models featured broadcloths in interiors, usually in two-tone, one such car showing a rich dark blue combined with light buff. This company featured "tailored-to-taste" and showed one interior in Scotch plaid.

Hudson used principally flat fabrics in the two-tone style using mixtures and stripes for the seat upholstery.

Willys' Americar used Canda cloth.

Dodge stressed bedford cords.

Oldsmobile gave prominence both to broadcloths and corded effects.

Packard offered 22 different color fabric combinations.

The Cotton-Textile Institute estimated that automobile industry will use 840,000 bales of cotton and that individual models of the 1941 cars may contain between 51½ and 81 lb. of cotton, depending on details of design. Under the surface of upholstery will be found many yards of cotton in the structure of the seats, with laminated cotton padding covering the springs as well as being used in the walls and tops.

Perhaps all the new things were not shown at the Automobile Show for it was understood that new fabrics using acetate staple have given a good account of themselves for automobile upholstery. Also "Norzon" made by Behr-Manning Co. by coating a fabric with flock through the intermediary of an electrostatic process, is being tested by five car makers for side walls and upholstery.

In some of the open cars shown there was interesting use of bedford cords in conjunction with the more usual leather. It is presumed that fabrics in such cars are water-repellent.

Soaking Ingredients

Must be carefully chosen and applied if desired crepe effects are to be secured

By GEORGE THOMAS

UTILIZATION AND CONTROL of the creping qualities of rayon yarn to secure desired effects in woven fabrics involve a combination of physical, chemical, and mechanical achievements. Producing and reproducing a given fabric, where the yarn's creping qualities play an important role in securing a desired effect, call for an intimate knowledge of the machinery employed and of the physical, mechanical, and chemical properties of the materials. It is difficult to study the various properties under these headings, but they can easily be discussed under several others. The more important factors that must be considered in producing a rayon crepe fabric, or a fabric containing a highly twisted combination of yarns where one of them is rayon, are: (1) yarn; (2) ingredients used in soaking; (3) technique employed in soaking, extracting, and drying; (4) mechanical set up of machinery; (5) weaving layout and fabric construction; and (6) dyeing and finishing technique and processes.

The securing of uniform results requires an absolute control of each of these factors. The stylist or designer who wishes to create a fabric where the effect is wholly or partially secured by the creping characteristics of a yarn must know how to vary these characteristics in such a way that the desired result is obtained.

No two brands of rayon yarn have exactly the same creping qualities, nor will they, when subjected to identical treatment, produce a crepe fabric with exactly the same pebble. This is equally true with respect to dyeing. Yarns, even from two different plants of the same manufacturer, should not be mixed in the same piece or in deliveries to the same cutter because each rayon manufacturer exerts a minute and definite control over the yarn he produces in each one of his plants. Therefore by using yarn from the same plant, and following it through the processes of throwing, weaving, dyeing, and finishing with the same technique, reproducible results can be obtained.

The several brands of viscose process yarn can be so processed in soaking and throwing that they are made to yield a definite controllable type of crepe or pebble. This is due to the fact that in viscose rayon the type of crepe or pebble depends upon the amount, rate, and time required to release the energy stored up during throwing.

Cuprammonium yarns, given the same corresponding number of turns of twist, will produce the same type of high-pebble crepe but one which the author has found is not modified to any appreciable extent by variations in ratio of one soaking ingredient to the other or in the total amount employed. Furthermore, the use of different types of soaking ingredients results in little difference in the pebble. The most practical ways to modify pebble with this type of yarn are by changing the construction of the weave and by embossing prior to boiling-off.

It is understood that acetate yarns are never used alone as primary twist yarns, but always as secondaries in a combination yarn.

Several rayon manufacturers, through their processing departments, offer throwsters and weavers semi-processed, or pre-soaked, yarns for crepe fabrics. Pre-soaked yarns offer certain advantages to manufacturers of standard-construction goods. Where yarns have been soaked and delivered in skeins, throwsters can eliminate soaking and drying costs which, of necessity, are higher for throwsters than for yarn manufacturers.

Oiled yarns delivered on cones eliminate other operations in throwing plants, such as soaking, drying, and winding. These yarns are finding favor among throwsters with cotton-type twisters. But neither pre-soaked skeins nor oiled cones are of much assistance to manufacturers of fancy and novelty fabrics, because they limit the type of pebble that can be obtained. The only methods of varying pebble fabrics made with pre-soaked or oiled yarns are by control of wet-finishing operations, by embossing, and by raising or lowering the temperature and concentration of the boil-off bath.

Many stylists, designers, throwsters, and weavers who are constantly developing fancy and novelty fabrics are finding that their ability to create a desired effect, pattern, or style in a rayon crepe fabric is limited only by their understanding of the fundamental principles of rayon soaking, their knowledge of soaking ingredients, and their manipulation of ingredients.

Materials used in soaking are of two distinct types. One is a size or a binder and consists of adhesive materials, such as gelatine, glue, gum arabic, dextrin, etc.; the other is a water-soluble oil or lubricant.

For the study of creping characteristics imparted by various soaking ingredients, experiments were carried out on a 4x4 canton crepe fabric, where the filling was 46 to 48 picks per inch of 200/75 semi-dull viscose-type yarn thrown with 48/50 turns, and the warp was 94 to 96 ends per inch of 150 denier semi-dull acetate yarn, set up in the loom with 47-in. reed space. A so-called normal or medium pebble was produced in this construction by a soaking formula consisting of 2½ lb. of size and 15 to 18 lb. of oil to 60 gal. of water. In one series of experiments, equal amounts of the same oil were used throughout, but the size was varied by using equal amounts of gelatines of different gel strength, blends of dextrin and gelatine; gelatine and gum arabic.

As far as pebble was concerned, results obtained by the author showed that it made no difference what binder was used as long as the ratio of binder to oil remained constant. However, it was found that some binders have preference over others. In the gelatine and dextrin blends, the gelatine is ruined if heated above 160° F., whereas most brands of dextrin require temperatures above 160° F. to become completely soluble. Under-cooked dextrin in a soaking bath tends to settle out of the solution and in subsequent soaking leads to non-uniformity. Gelatine and gum arabic blends worked well as far as solubility goes, but yarns soaked with gelatine and gum arabic as binders lost tensile strength due to the brittle nature of the gum arabic size film on the yarn. High gel strength gelatines were not so satisfactory as low or moderately low gel strength gelatines because they did not possess sufficient elasticity. Furthermore, the higher gel strength gelatines were more difficult to get into solution and had a tendency to congeal at lower temperatures.

A very satisfactory binder was a prepared rayon warp sizing compound with a high-grade gelatine base; this compound dissolves at a low temperature (about 140° F.), has a low ash content, and mixes readily with water without lumping.

[A subsequent article will discuss these experiments in more detail and will describe a moulage method for preserving results of such tests.—*Editor*]

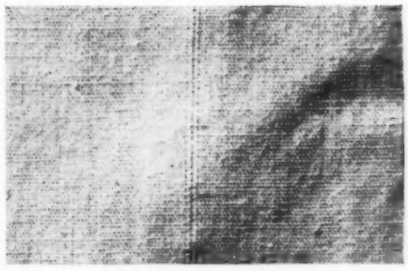
Imperfections in Cotton Fabrics

Cause less trouble when all parties concerned call them by correct names

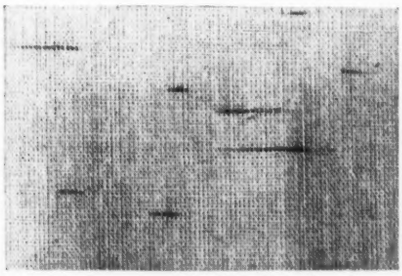
THE VALUE of mutual understanding of terms can nowhere be illustrated more clearly than by taking as an example the common defects in cotton gray goods. When the cloth room reports warp streaks as cracked dents, or broken warp ends as misdraws, the weave room works hard to correct a non-existent fault. The time and effort could easily be avoided if mills would define and illustrate all defects and then educate the employees to the official definitions. However, differences in use of terms occur not only within the mill but frequently go much further—they often exist between the selling office and the mill.

To make sure that all defects are called by their correct names, it is sometimes advisable to weave pieces of cloth containing all the common defects, to label the imperfections correctly, and to distribute the pieces to the parties concerned. Several such samples, displayed at points about the cloth room, are of great value to graders in listing defects correctly, and such a sample in the hands of the selling agent greatly reduces telephone, telegraph, and shipping expenses.

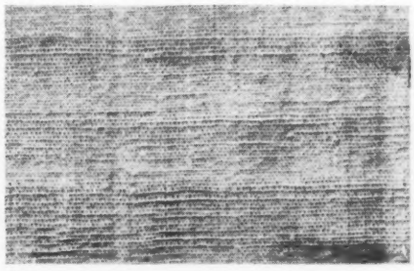
A second method is that of photographing defects and distributing the marked pictures in the same manner as the pieces of cloth. TEXTILE WORLD presented a number of such photographs in the May, 1940, issue; those reproduced below are offered as a supplement. They should prove valuable as a reference and aid in the elimination of misunderstandings.



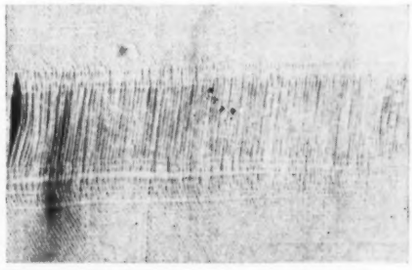
Flat or misdraw—*Appearance:* Streak in warp resembling that caused by broken end or cracked reed, difference being no end out in warp. *Causes:* Carelessness on part of weaver drawing in broken end or drawing-in hand on new pattern. *Remedy:* Caution operatives to draw all ends correctly, inspect headend from each new warp tied in, have loom-fixers check looms in spare time.



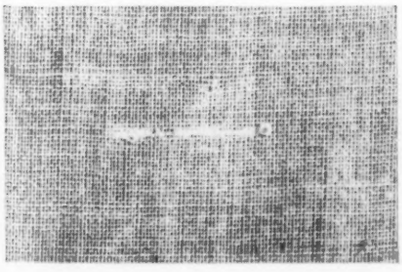
Oil Streaks—*Appearance:* Black or stained streaks running warpwise or fillingwise. *Causes:* Careless oiling of roll stands and saddles in carding and/or spinning room, or careless oiling in almost any department; dropping bobbins on floor during handling; oil dropping into warp from overhead shafting. *Remedy:* Care in oiling and in handling of bobbins.



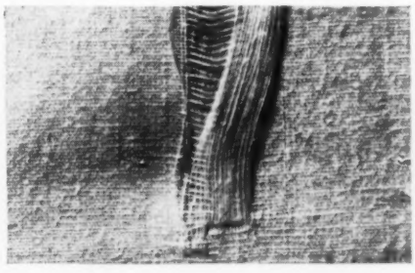
Wavy cloth—*Appearance:* Thick and thin bands running across fabric. *Causes:* Faulty let-off or take-up, fabric slipping on sand roll, pick wheel missing, loose beam heads, bad or tight bearings in take-up, warp beam or whip roll out of line, bent beam gudgeons. *Remedy:* Check-up beginning with take-up and let off motions, repair faulty part.



Thin place—*Appearance:* Strip without filling ranging usually from a fraction to over an inch in width. *Causes:* Loose crank arm allows loom to throw out bobbins; splinter or nick on shuttle breaks filling; bobbin tails not unwrapped, or tail slips as new bobbin is picked; filling grate clogged up. *Remedy:* Check shuttle; follow up other causes if trouble is not in shuttle.



Kinky filling—*Appearance:* Short, thick places running fillingwise with an occasional small loop. *Causes:* Improper conditioning, too much twist in spinning, or insufficient shuttle tension. *Remedy:* Correct conditioning, less twist, heavier shuttle fur, or more tension in shuttle eye.



Overshot, undershot, floats—*Appearance:* Picks and warp ends not interlacing. *Causes:* Ends breaking and catching in shed, lint or waste falling into shed, harness improperly set. *Remedy:* Set so as quickly to jerk broken ends out of harness and reed in order to prevent tangling.

Hard size—*Appearance:* Sandpaper effect and feel. *Causes:* Warp allowed to remain immersed in size too long, or to dry too hard against cylinder while stopped. *Remedy:* Keep slasher moving while yarn is in process; reduce necessary stops to a minimum.

Blueprinting Wool Staples

Gives accurate record of fiber length, waviness, diameter, and other features

By JOHN L. McAULIFFE

BLUEPRINTS are ordinarily associated with architectural and mechanical drawings. However, the writer has found an additional use for them—depicting the characteristics of wool staples. For this purpose, it is believed, the blueprinting method offers advantages over photography. Photography depends for its effect upon a series of lights and shadows that range from strong highlights to grays and black. As a consequence, some of the fibers in a photograph may appear white and others dark. This makes it practically impossible accurately to compare the fibers one with another. Moreover, the size of the fibers in a photographic print may or may not be the same as the samples photographed, depending on a variety of circumstances.

Blueprints, on the other hand, present the wool fibers in a two-dimensional plane, without any shadows. And, since prints are made by the contact method, each fiber appears in its true size and correct relation to each other fiber in the sample.

Blueprints of wool staples show clearly the length, uniformity, waviness, diameter, and general quality of the stock. Prints can be filed, and thus become a detailed record of the various grades used. These records can be referred to for comparing new lots coming in with those received earlier.

The method of making the prints is as follows: Procure a yard of draftsmen's blueprint paper, a half pound of potassium bichromate crystals, and a photographic printing frame. Dissolve some crystals in a quart of water; enough to give the solution a deep orange color. Then place a small specimen of wool in the printing frame next to the glass and cover it with a piece of blueprint paper, sensitive side next to the wool. Next fasten the back on the frame; then turn it over and expose to direct sunlight until the paper becomes a bluish gray. Due to variations in the intensity of the sunlight, a few tests may be necessary to get the best exposure time.

Remove the paper from the frame, dip it in clear water for an instant, then immerse it in the potassium bichromate, or fixing, solution for 2 to 3 min. As soon as the paper is removed from the solution, wash it in running water until all traces of the solution are removed. Then, place the print between blotters to dry.

The blueprint paper must be handled, before and after exposure, in a semi-dark room, as the paper is sensitive to light. After it is put into the fixing bath, however, this is no longer necessary.

Blueprints of three typical wool staples

FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter IV. Sinkers and Dividers

By WALTER A. SIMOND

SINKERS AND DIVIDERS must be perfect to produce perfect fabric. The lines caused by defective sinkers range from very fine ones, which are barely discernible in good light, up to large and loose wales. When the bad sinker wale is due to roughness on the top of the sinker or divider nose, turning the needles down by the handwheels will often cause the yarn to be pulled at the rough spot and indicate the sinker to be replaced. If however, the roughness is on the under side of the sinker nose or if there is any question as to which sinker or divider is marking, it is best to replace a few at once so the knitter may continue with his work, after which the sinkers and dividers taken from the head may be carefully examined with a microscope for defects.

The following list of defects of sinkers and dividers, and other information in this chapter inclosed in quotation marks are abstracted from the February, 1934, issue of the *Reading Record*. The list follows: "(a) over or under size; (b) misaligned with needles of need bar; (c) incorrectly pliered, having a twist or bend; (d) broken sinker-backs; (e) too much vertical play in sinker head slots (such heads ought to be shipped to the builders for reconditioning); (f) rough or rusty spots on sinkers; (g) sinkers and dividers with rough throats and noses; (h) sinker and divider throats cut-in by the silk; (j) reinforcing plates loose on the sinker-back; (k) replacing old sinkers or dividers with new ones in an old head; do not mix new sinkers and dividers with old ones in refilling a sinker head; the best plan is to fill one head completely with new parts and use the old parts that appear to be in good condition for substitution in heads containing old parts; this is important because a sinker head having some old and some new parts will not produce satisfactory fabric under general conditions; (l) mixing sinkers and dividers of different manufacture in a single head; and (m) sinkers worn heavily where they strike the verge-plate will feed too much yarn. Such sinkers should be replaced with others corresponding to those remaining in the head."

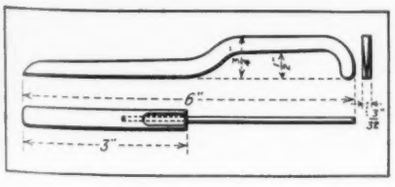
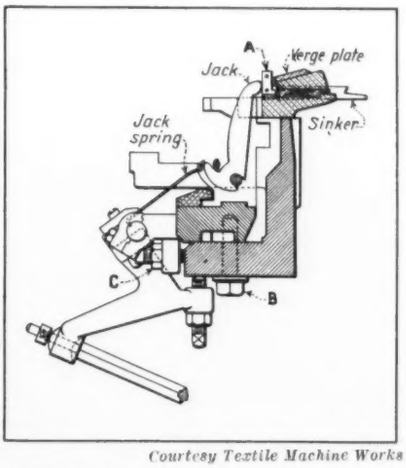


Fig. F7. Sinker tools

A good tool for sinker removal is shown in Fig. F7. It may be made from either cold-rolled or tool steel 3/32 in. thick; the thin point should either be case hardened or tempered depending upon the stock used. For divider removal when the butts are broken off, a straight piece of piano wire about 0.05 in. diameter is used, having a *V* groove filed in one end. It is inserted in a hardwood handle having flats (also shown in Fig. F7) to enable one to keep the groove vertical, readily. The sinker-head and jack-bar arrangement is shown in Fig. F8.



Courtesy Textile Machine Works

Fig. F8. Sinker-head and jack-bar arrangement

SINKER HEADS are carefully constructed, and there is a minimum of clearance for the sinkers and dividers in new machines; but it is important that the heads be correctly located in the machines, and the correct procedure for the initial setting and for realignment of a wrong setting is the same.

"There are various causes to be found in the sinker head itself for the appearance of the sinker lines; and since, in most cases, the cause suggests the remedy, a list will be given here and explanations made only where it is deemed necessary for clearness of instructions:

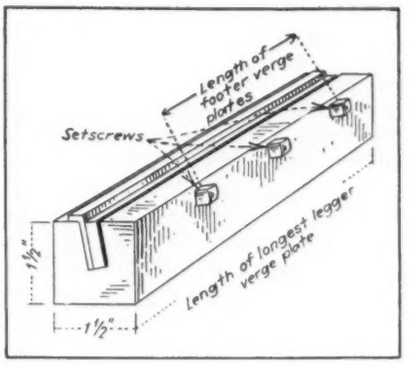


Fig. F9. Grinding fixture used for verge plates

"1. Sinker heads with heavily worn slots allowing the sinkers and dividers to sway in a horizontal direction.

"2. Sinker heads must be level and completely supported by the center bed. Where a twist is apparent in the head, causing the sinkers to bind, it can be removed by chiseling cross-marks or scoring the center-bed pad at the center of the section. This should be done only by a skillful mechanic; otherwise the head may be forced from one extreme to another and result in further trouble. Both sinker heads for a double needle bar must be of the same height.

"3. Out of line with the needle bar. Check the surfaces of the center bed with a straightedge where the sinker heads are fastened. If any variation is found, it can usually be corrected by peening. After such corrections are made, should the sinker heads still show uneven seating on the center bed, the trouble can be remedied by inserting paper liners and by filing pads of the sinker head where necessary. Care should be taken to limit the thickness of the paper liners to 0.005 in. and, when filing the pad, to equalize the adjustment to make sure that the pad is filed square.

"4. Stiffening screws set unevenly re-

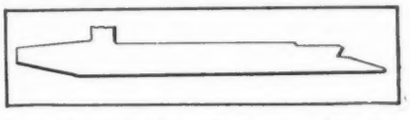


Fig. F10. Broken butt divider for opening partly closed slots

sulting in a variation of the distance between the top and bottom, causing tight and loose sinkers and dividers at different points across the head.

"5. Worn out or cut-in verge plates. Either replace or regrind.

"6. Incorrect clearance between sinker-backs and verge-plate. Having the correct amount of clearance at the sinker-back and the verge-plate is important if uniform fabric is to be produced. This clearance should be such that, with the jacks completely forward, a divider corresponding to the gage of the machine can be placed between the sinker-back and verge-plate. Sometimes the clearance is not enough to prevent the sinkers from battering the verge-plate to such an extent that all sinkers are carried forward variable distances, resulting in the formation of uneven sinker wales. The only remedy for this is to grind the verge-plate and make sure the clearance is correct.

"7. Foreign matter between verge-plate and sinkers, such as dirt or needle beards.

"8. Dirt in groove or slots of verge-plates, eliminating shock absorber effect.

"9. An important cause for the appearance of sinker lines, especially on machines that have run a few years, is indentations in the presser edge of the sinker head. Such nicks will interfere with the correct pressing off of the old loops and cause an injured, split, or partly tucked stitch, which results in an unsightly wale line or lines. Presser edges must be reground when this condition exists."

Surface grinding for verge-plates, mentioned under item 6, is least expensive and requires no hand finishing. A grinding fixture as shown in Fig. F9 can be easily made from a piece of machinery steel $1\frac{1}{2}$ in. square and the length of the longest verge-plate. A clamping plate $\frac{1}{4}$ in. thick and three setscrews, $\frac{5}{16}$ in. 18 thread, are all the additional material required. Cold-rolled stock, if used, would be likely to warp while the slot is being milled or when it is removed from the miller. The end setscrews should be the length of the footer verge-plates apart.

Sometimes when a sinker breaks, and more often when the butt is separated from the blade of the sinker, the weight of the catchbar will drive the broken butt against the bed of the sinker head and close one or more slots so the sinkers will bind or cannot be replaced. Partially closed slots may be reopened with a broken butt divider, of the same gage, ground with a long angle at the nib and having the nose rounded so it will not catch on the bottom of the sinker slot, as illustrated in Fig. F10. The ground edges should be square, but smooth. With the catchbar up and the sinkers pushed back even with the presser edge of the sinker head, but left in the slots to support adjoining walls, the opening divider is pushed back as far as it will go freely in the bruised slot, and then grasped firmly with a stout, blunt-nosed pair of pliers about $\frac{1}{4}$ in. from the front of the sinker head. Then with a few short punches, so as not to touch the front of the sinker head, the slot may be opened. A few sinkers only are removed for the insertion of a screwdriver blade back of the verge-plate, and pressure is applied against the opening divider blade and bent wall close to the surface of the sinker head to let the divider blade go free. This method will leave the slots in much better condition than by sawing them out with a divider having a saw-toothed nose, and will save much of the time usually required to remove and reset the sinker head after it has been fixed.

CIRCULAR MACHINES. Chapter VI. Sinkers and Cams

By JULIAN W. HUGHES

THE ORIGINAL FUNCTION of sinkers used with circular hosiery machines was to hold down the knitted fabric and assist the needles in casting off the loops. With the advent of reverse plating, sinkers took on a second function—that of manipulating the main knitting yarns to effect lengthwise stripes. More recently sinkers have been devised to cause certain loops to stand out so as to produce a terry-cloth effect. There are many different types of sinkers, each designed for a specific purpose. Some of the more familiar types are illustrated in Fig. C6. The normal plating sinker will be recognized at *A* by the low butt. The others are for producing various patterning effects, according to the set-up of the pattern drum and its connection through levers to the various actuating cams.

Once sinkers have been put in place, set in their proper relation to the needles, and adjusted to act at the correct time for efficient plating and holding of the fabric, they will give little trouble. Eventually, however, they will wear out and will have to be replaced. When the sinkers in a machine begin to show signs of wear, they should be replaced with a complete new set. It is not good practice to put in one new sinker at a time as an old one gives out. If new sinkers are mixed with old one which are worn, the stitches will not be uniform.

When machines are re-sinkered, the old sinkers should be saved until they can be sorted. Upon sorting, some will be found that are still good for weeks of service. These should be salvaged and matched in sets with others saved from previous lots. Any which are badly worn and not worth salvaging should be discarded.

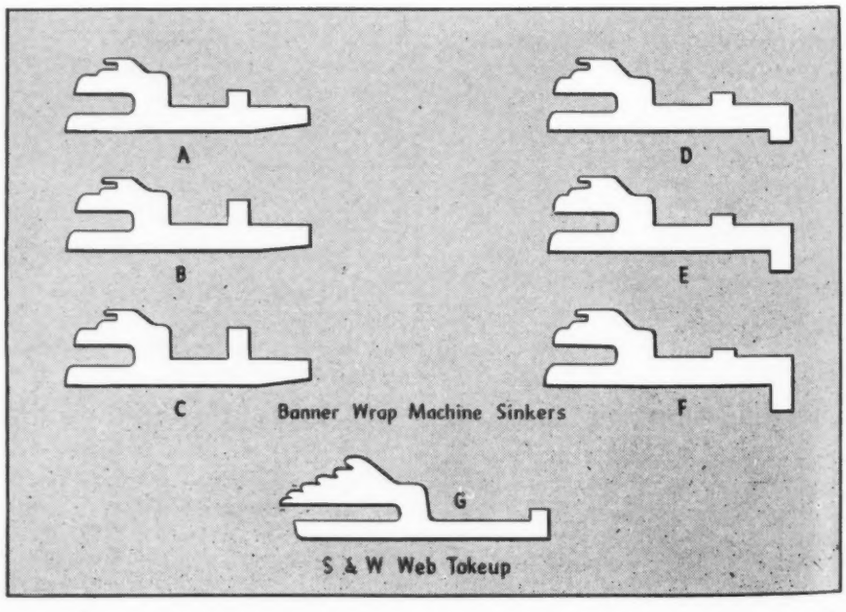


Fig. C6. Several common types of sinkers as used on Banner and Scott & Williams circular hosiery machines

TEXTILE MODERNIZATION FOR DEFENSE

Photo by Cozo

Editorial Introduction

By DOUGLAS G. WOOLF

THE Annual Mill Check-Up Number of TEXTILE WORLD has become an established means whereby textile manufacturers can appraise their individual effectiveness: their opportunity to net a profit instead of a loss, or to expand a profit.

But this year the program is different. In addition to, and in fact transcending, this opportunity is a responsibility: a responsibility which every American shares, but which falls particularly heavily upon the great industries of the country. And of these, there are some which are more exclusively concerned with defense than is the textile industry, but there is none which bears more acutely the dual burden of supplying defense materials and meeting a basic need of the civilian population.

Consequently, the demand for textile modernization which in other years has been based primarily upon a self-interest motive, is this year a patriotic call.

NOR IS THIS MERELY a call of the moment. It is a long-range call: a long-range responsibility and opportunity. Even the most casual knowledge of the world-shaking events of the last year will reveal that there is no early end, in sight, to the emergency.

But national defense cannot be served by broad generalities. Its effectiveness depends upon the individual efficiency of each group, each unit, each industry, each craft, whose product—whether in the form of materials or of labor—contributes to the national program.

So, in devoting the 1940 Annual Mill Check-Up Number of TEXTILE WORLD to the theme "Textile Modernization for Defense," the editors are conscious of their own responsibility. It is their job to indicate to their readers just what constitutes maximum efficiency in all phases of their activity. Not only in plant, equipment, engineering facilities and supplies—but in employer-employee relationships, working conditions, protection again sabotage, production planning, merchandising, purchasing, and the many other functions of management.

And the reward? First, there is the satisfaction of serving one's country through individual contribution to national defense. That, in itself would be enough. But, in addition, there will be the material rewards of fair profits which always accompany sound mill activity; of a high rate of employment; and, finally, of the opportunity to place plants and policies in optimum condition. When the emergency is over, the latter will be the stepping-stone to a permanently successful industry.

AND SO WE APPEND THESE TWO MEMOS:

Memo to textile manufacturers: If you can't make money in the textile business in the next year, you never will be able to. Defense purchases, plus expanded civilian buying due to increased purchasing power of the millions, promise record textile volume.

The only alibi you might resort to would be that your plant or equipment or production policies or purchasing and sales policies or engineering facilities or working conditions or financing arrangements were not tuned up to enable you to avail yourself of this opportunity.

In the following section, we have stolen this alibi from you. We have provided you with complete check-charts whereby you can immediately check your position, and take steps to make it tops.

Memo to suppliers: If you can't make money out of the textile industry in the next year, you never will be able to—for the same reasons cited above.

Your service to the industry is as vital to textile progress as is that of the textile manufacturers themselves. Unless you sell and service your equipment, accessories, supplies, and what have you, effectively and aggressively, the industry itself will muff this ideal opportunity.

That is what this special section is all about.

EDITORIAL CREDIT: Every editorial job is the product of men. The section which follows was developed under the direction of Winn W. Chase, associate editor of TEXTILE WORLD. Individual articles, in addition to those prepared by outside contributors, and so indicated, were written by members of our editorial staff: William B. Dall, William G. Ashmore, Earle Mauldin, Howard P. Galloway, Gordon B. M. Walker, and this writer.

All of us offer this section as one which outlines the most urgent responsibility the industry has faced for two decades; and, equally, its greatest opportunity.

"MODERNIZATION FOR DEFENSE" SECTION FOLLOWS ➡

Are you able to cope with emergencies with your PRESENT PRODUCTIVE EQUIPMENT?

THE MOST important job immediately ahead of the textile industry is to furnish the 1,500,000 or more men who will be under arms next year with the necessary fabrics for uniforms and other textile equipage. At the same time, it must meet the normal requirements of the civilian population for textiles for apparel, household, and industrial use. Speed is essential in the performance of the first part of this task; desirable in carrying out the second part. Already bottlenecks have occurred in manufacture of a few types of textiles required in large amounts for military purposes. Already it has proved necessary to start development for civilian use of new fabrics in which synthetic fibers replace in part or in whole natural fibers that are normally imported.

Modern productive equipment is needed, of course, if these bottlenecks are to be uncorked and potential ones avoided. Likewise, up-to-date machinery will aid materially in manufacturing textiles to meet the rigid specifications set up by the Government. It is necessary, too, if satisfactory results are to be obtained in handling rayon staple and other synthetics which will be employed in increasing quantities as the shortage of certain natural fibers becomes more acute.

INCREASING PRODUCTION

In many instances modernization programs will have to be revamped to meet emergency conditions. That is, mills which have adopted a policy of concentrating all attention on a single department of the plant, bringing it completely up-to-date before a second one is tackled, may find it necessary to abandon this plan temporarily and modernize first the worst spots in each department. Then again, in any modernization work carried out now, major emphasis must be placed on installation of machines which increase production or of special-purpose machines. This does not mean, however, that modernization of equipment to reduce costs or to effect improvement in quality of product has diminished in importance.

Many of the textiles for military use differ in construction from those ordinarily manufactured for civilian purposes. Hence, companies obtaining large government contracts may find that the first step necessary to efficient production is the installation of new equipment in certain departments in order to balance the mill. This is likely to be true particularly in plants which heretofore have been accustomed to manufacturing somewhat lighter fabrics. For example, cotton mills making heavy Army duck may find it necessary to increase production in their picking, carding, drawing, slashing, and weaving departments. Woolen mills on army overcoatings may have to step up the scouring, dyeing, picking, carding, and fulling operations. Worsted mills may need to expand top dyeing and other facilities. Knitting mills producing heavy woolen underclothing and socks, lining materials, and mosquito netting may discover that additional capacity is required. Finishing plants may learn that the dyeing department is the bottleneck. Again, future changes in specifications for military fabrics may throw the mill out of balance and necessitate installation of new machinery in one or more departments. In any of these cases, installation of additional machines or replacement of older equipment with the same number of modern high-speed machines may be the answer.

Companies which have received large orders from the Army for such textiles as blankets, uniform cloths, and socks are pressed to make quick deliveries of these materials and, concurrently, to maintain normal production of textiles for civilian use. As nobody knows how long the heavy demand for military fabrics will continue, the question of how much additional equipment to install without over-expanding productive capacity is difficult to answer. However, many individual manufacturers feel that replacement of obsolete machines with up-to-date equipment not only will aid them in increasing production now, but also will put their mills in a better condition to meet any situation which may arise when the present emergency is over.

The necessity for eking out the supply of natural fibers available for civilian purposes will, without doubt, hasten the adoption of rayon staple and other synthetics in manufacture of a wide variety of woven and knitted fabrics. Since this trend toward more extensive use of synthetics is not a temporary one, but is certain to continue regardless of how long the war lasts, there is every reason for textile mills to prepare at once to handle these fibers in the most efficient manner. This, of course, presupposes the use of the new types of machines now available which are designed specifically for use with continuous-filament rayon and rayon staple. Such equipment runs almost the entire gamut of preparatory, spinning, throwing, winding, twisting, warp preparation, weaving, knitting, dyeing, and finishing machinery. Among the machines which appear to merit particular attention at this time are the various types developed recently for handling rayon staple.

FASHION SHIFT A FACTOR

Two other conditions arising from the war which textile manufacturers should take into account in connection with their modernization programs are the Paris-to-New York fashion shift and the cutting off of imports from Europe of certain specialty fabrics. Smaller manufacturers, particularly should carefully consider the feasibility of installing new machinery which will permit them to produce the "exclusive" apparel fabrics desired by creators of fashions, and the industrial and other specialty fabrics formerly imported for which there is a relatively small but steady demand.

The accompanying chart, listing about 85 different types of equipment which have been developed or improved in recent years, affords the textile manufacturer a means for checking quickly to see if his mill has installed the modern productive machinery necessary to cope with emergency conditions. This preliminary check will in numerous cases indicate to individual manufacturers the advisability of drawing up a similar, but more detailed, chart for each department of their mills as a prelude to modernization to balance production for manufacture of textiles for military purposes or to get in shape for producing new fabrics for civilian needs.

Has your mill installed this modern productive equipment?

COTTON

- Blending feeders ○
- Latest-type cleaners ○
- Efficient distribution system ○
- Single-process pickers ○
- Tinting and spraying equipment ○
- Vacuum or continuous strippers on cards ○
- Improved combers ○
- Long-draft drawing ○
- Long-draft roving ○
- Long-draft large-package spinning ○
- Up-to-date filling conditioners ○
- Automatic high-speed spoolers and warpers ○
- Large-package twisters ○
- High-speed winders ○
- Slasher-control system ○
- Warp tying-in machines ○
- Automatic drawing-in machines ○
- High-speed automatic looms ○
- Up-to-date knitting machines ○
- High-speed shears ○
- Up-to-date inspecting machines ○
- Improved sewing machines ○

RAYON and SILK

- Machine-soaking equipment ○
- Extractors and air dryers ○
- Improved skein winders ○
- Precise-wind coners ○
- Balanced-package throwing ○
- Up-to-date conditioning and twist-setting ○
- High-speed warpers and beamers and magazine creeling ○
- Large drum multi-cylinder slashers ○
- Warp tying-in machines ○
- High-speed automatic looms ○

RAYON STAPLE

- Fiber cutters ○
- Special pickers ○
- Oiling and tinting equipment ○
- Hot-air dryers ○
- Efficient blending equipment ○
- Up-to-date staple-fiber cards ○
- Long-draft drawing ○
- Long-draft roving ○
- Long-draft large-package spinning ○
- Large-can multi-cylinder slashers ○
- Warp tying-in machines ○
- High-speed automatic looms ○

WOOLEN and WORSTED

- Instrument-controlled scouring ○
- Improved continuous dryers ○
- Mechanical blenders ○
- High-production pickers ○
- Mechanical oilers ○
- Ceiling condensers or rotating distributors ○
- Wide cards with improved feeds, tape condensers, larger jack spools and vacuum stripping ○
- Backwashers with high-capacity dryers ○
- Intersecting gill boxes ○
- Ring-type reducers and rovers ○
- Large-package mule or ring woolen spinning ○
- Latest-type worsted ring-spinning ○
- Filling rewinders ○
- Up-to-date filling conditioners ○
- High-speed cone winders or jack spoolers ○
- Large-package high-speed twisters ○
- High-speed creel warpers ○
- High-speed dressers ○
- High-speed automatic looms ○
- Up-to-date knitting machines ○

PROCESSING

- Adequate water-purification and softening equipment ○
- Improved raw-stock dyeing and bleaching machines ○
- Latest-type skein dyeing machines ○
- Improved package, top, and beam-dyeing machines ○
- Corrosion-resistant hosiery dyeing machines ○
- Efficient boarding equipment ○
- Improved dyeing and finishing machines for knit goods ○
- Up-to-date mercerizing machines ○
- Continuous boil-off machines ○
- Tensionless or other improved jigs ○
- Up-to-date padders ○
- Improved reel dyeing machines ○
- Improved continuous dyeing machines ○
- High-speed printing machines ○
- Improved continuous print-goods washers ○
- Latest-type preshrinking and other cotton finishing machines ○
- High-production fulling mills ○
- Improved continuous cloth washers ○
- Improved continuous carbonizers ○
- Efficient extractors and dryers ○
- Up-to-date dry-finishing equipment ○

Are you preventing bottlenecks and back-tracking by PROPER MACHINERY LAYOUT?

THERE IS no time to lose if the textile industry is to do its part in supplying the vast quantity of fabrics urgently needed for military use, as well as a sufficient amount to satisfy civilian requirements. Since waste motion means time lost, backtracking of work in progress must be reduced to a minimum. With attainment of balanced machine capacities to avoid bottlenecks in production, correct machinery layout is then essential for smoothest, quickest, and most efficient flow of materials. The problem of proper placement of machines with relation to one another, and of proper location of departments, is complicated by the fact that any rearrangement of machinery undertaken now must be accomplished without serious interruption of production.

Modern textile mills are designed to give a straight-line flow of production, but the layout of older mills often is such that there is considerable back-and-forth movement of materials from one part of the plant to another. Relocation of departments to prevent this backtracking is a major undertaking requiring months, or even years, to complete if it is to be done without interrupting operation of the mill. Usually such a move is carried out in several steps and under the supervision of an outside engineer. Mills which have embarked on extensive programs of this type may find it possible to speed them up somewhat, which will be advantageous regardless of the duration of the present emergency. Likewise, plants which find it necessary to modernize a department by replacement of old equipment with new may be able at the same time to relocate the department, using the old machinery until the new is ready to be put into operation.

An expedient to which several companies have resorted to avoid backtracking is the installation of key types of machinery in temporary locations. For example, in a large finishing plant which is vat-dyeing cotton fabrics in olive drab and khaki shades by the padder-jig method, the pad dyeing and jig dyeing departments are in separate buildings some distance apart. Installation of a small number of padding machines in the jig dyehouse obviated trucking of the padded goods from one department to the other.

Changes in layouts of machinery in a room or department can frequently be made with little disturbance of production—often during week-ends. A description of the way in which one large mill modernized its machinery layout appeared only last month in TEXTILE WORLD. In that plant, the carding- and spinning-room layouts were rearranged so that machines are now lengthwise of the room, instead of crosswise as formerly. With the new arrangement, material in process travels from drawing, to roving, to spinning with a minimum of mileage.

It does little good to place machines or departments in apparently proper sequence if materials cannot travel between them by the shortest possible route. When trucks or boxes must be carried extra yards because doors, alleys, aisles, or elevators are improperly placed or are of inadequate size, unnecessary expenditure of labor and time is the result. Building or widening of doorways and installation of elevators—both of which can be accomplished without hindrance to production—may permit a cutting down of the distance which material must travel. In this connection should be considered also the matter of correct size, shape, and construction of containers for various materials in process. Thus, filling containers should not be too wide for easy use in existing loom aisles.

Rising labor costs, the possibility of shortage of men, and the desire to improve working conditions all contribute to the advisability of so arranging machinery layouts that greatest possible use can be made of mechanical conveying systems of one type or another. Cloth-room layouts, for instance, can frequently be rearranged so that belt conveyors can be employed to transport fabrics to and from inspecting machines.

Adequate spare-floors or storage spaces constitute one mark of a well-arranged mill. Where one spare-floor is to serve a relatively large group of machines, it is advantageous to place it in the center of the group, or as near thereto as possible. On the other hand, one spare-floor located between two small groups frequently is sufficient. Installation of new machines in place of old often results in a saving of floor space which can be diverted to storage purposes. Likewise, when machinery arrangements are revamped, it is frequently possible to include a centralized spare-floor in the new layout.

There probably is no such thing as an ideal machinery layout. The size of the mill, number of stories, and shape of rooms are all factors to be considered. Again, what may be a good arrangement today may not be tomorrow when the mill starts production of new types of fabrics. Hence, a mill turning to production of military fabrics or to new types of fabrics for civilian use should check its machinery layout to determine what major or minor changes are necessary if the plant is to function most efficiently.

Have you taken these steps toward attaining proper machinery layout?

- **Machines and departments located in proper sequence** ○
- **Aisles, doors, and alleys of sufficient width** ○
- **Adequate elevators at strategic points** ○
- **Mechanical handling equipment wherever possible** ○
- **Adequate spare-floors, advantageously placed** ○

Are you assured of top-speed deliveries by your PRODUCTION PLANNING METHODS?

IN ORDER swiftly to fulfill military requirements and, at the same time, to continue to supply goods for civilian needs, textile mills must plan their production schedules even more carefully than in the past. Machine loads must be kept in balance; delivery dates must be met; and waste, lost motion, and inefficiency must be eliminated. Few mills can use identical methods with equal degrees of success; however, certain elements, characteristics, and devices are common to practically all successful planning systems. Thus, since production must be planned in close harmony with both sales and manufacturing, most mills favor a centralized planning department.

For putting new orders to work, inventory reports supplemented by purchase and process records provide an accurate knowledge of materials on hand. It is frequently both possible and practical to make slight changes in the plant organization of goods in process to meet a rush order. This possibility is particularly important at this time, when there is urgent demand for certain military and civilian fabrics, and mills must be ready to take every step to speed up production of necessary fabrics.

Modern filing systems make readily accessible complete specifications and all necessary manufacturing data for each yarn, fabric, or finish. If information on blends, weights, colors, constructions, treatments, machine speeds and settings, and other vital points is grouped on cards by processes or departments, it can be passed on readily to foremen at the proper time.

For predetermining production, machine-load balance, delivery dates, and costs, information on machine speeds and productions must be accurate and up-to-date. Some men assemble all such information in one file; classify it by processes; and break it down further into weights, sizes, twists, picks, gages, needles, etc. Many more, however, include all data on the specification sheets.

A "machines-available" chart for each process is not essential, but is very helpful in eliminating bottlenecks, balancing the mill, and calculating delivery dates. Such a chart shows work running on machines, work planned for machines, and the dates on which work will be completed. For example, from the weave room chart, plus a record showing just when each warp was tied in, the planning department can calculate the exact day, barring unforeseen delays, on which each loom will be available.

A machinery layout of each room aids the planning department in scheduling work to obtain a smooth flow of materials, in eliminating extra and unnecessary handling, in making allotments by machine numbers, and in knowing just what is running on each machine.

Many mills starting to manufacture military fabrics will find it necessary to revise printed or mimeographed order forms for each department. As a rule, an order passed on to overseers and foremen shows style or lot number, lot identification mark, complete description of stock to be received and delivered, amount of stock to be received and delivered, schedule of production, and machines allotted.

Visual control boards for each department have been adopted in numerous plants as aids to overseers in carrying out instructions. These boards show what work is running on and is scheduled for each machine and permit appraisal of the department's position.

To avoid mixing materials—particularly where different fibers, yarns, staples, or blends are used—the planning department usually provides some means of lot identification by assigning colored chalks, painted-tip bobbins, or a fugitive tint to each lot or style.

Finally, the planning department needs a system for checking daily or weekly production. Production figures can be prepared from readings taken by employees under supervision of the planning department or the overseers. Such figures are necessary for checking to see that the planned schedule is being maintained and that deliveries will be made according to contract.

Has your mill these modern aids to production planning?

- Visual control boards ○
- Complete style specifications ○
- Inventory records ○
- Delivery schedule ○
- Daily production figures ○
- Departmental schedules ○
- Machine-speed information ○
- Machinery-layout chart ○
- Definite machine allotments ○
- Work-sheets for each process ○
- Machines-available chart ○

Are you achieving higher productivity by means of GOOD WORKING CONDITIONS?

TEXTILE manufacturers in this country have always recognized the importance of good working conditions in increasing productivity and in attracting and holding the best types of workers. They have been quick to adopt improved equipment which provides safer, healthier, and more comfortable conditions. As a result, standards for good working conditions have steadily risen. Now the national defense program calls for still higher standards. On the one hand is the growing demand for textiles; on the other is the increasing drain on the textile labor supply. The best possible working conditions in every department of the plant are needed if men and mills are to function at their highest efficiency and if labor turnover is to be kept at a minimum.

EMPLOYMENT POLICIES

The increased activity of the industry due to large government orders and the calling of young men now employed in mills into military service will necessitate the hiring of many new workers. Hence, a good place to begin improving working conditions is to check up on the physical and psychological condition of the employee himself, since good working conditions mean little to an ill or dissatisfied worker. Most mills require new employees to be in good physical shape before they are put to work, but it is not general practice to give periodic medical examinations to workers after they are hired. However, if the efficiency of an employee begins to drop, an examination may reveal some minor ailment or deformity which would indicate the desirability of transferring him to some other job where he would not be handicapped. A few mills have installed job-analysis systems which indicate the physical, mental, and other qualifications which a worker should have to be fitted for a specific job. At the very least, employment managers and overseers should use common sense and judgment in assigning jobs to new employees.

It is hardly necessary to say that machinery must be in the best possible shape to assure "good-running work" —the most important requisite for any job, next to a fair wage and steady work. Nothing is quite so discouraging for a worker as to be continually fighting inefficient machinery "to make production."

The benefits of air conditioning from the viewpoint of health, comfort, and efficiency of workers are now widely recognized; and many textile installations made in recent years have had the improvement of working conditions as their primary purpose. Likewise, the part that automatically controlled air conditioning plays in increasing production and in improving uniformity and quality of product is well known. In manufacturing textiles to the close specifications set up by the Government, adequate air conditioning is, of course, a big aid. Again, in handling some of the newer synthetic fibers, such as Nylon, correct humidities and temperatures are even more important than with natural fibers. Air cleaners which remove dust and lint serve a dual purpose likewise—reducing seconds and improving working conditions.

Clean rooms and equipment reduce accidents and spoilage of materials in process. A regular system of cleaning is necessary if the mill is to be kept spick and span. There are numerous vacuum devices and traveling cleaner systems for direct application to machines which greatly facilitate cleaning. Portable blowers are available which can be wheeled from one part of the plant to another, some being equipped with attachments for spraying paint and other compounds. The old-fashioned air hose can be used effectively if care is taken to keep the nozzle away from oily bearings and to point it downward at all times. For floors, there are automatic scrubbers with revolving brushes, and new finishes which eliminate the use of water in cleaning. A high-pressure chemical vapor spray is available for cleaning walls, windows, and certain types of machinery.

IMPROVED LIGHTING

Industrial mobilization for defense brings with it the necessity for maintaining a high morale among employees; and good lighting is one of the biggest aids to morale. A careful study may well show that modernization of lighting facilities will result in generally improved morale and health of employees, as well as fewer accidents, increased production, lower costs, and less seconds. Investigation of lighting requirements for each department and process should include consideration of improved incandescent, mercury-vapor, and fluorescent lamps and fixtures for both general and localized lighting.

Emergency demands for speedier production plus the continually increasing size of packages, such as loom beams, cloth rolls in finishing plants, etc., necessitates a re-investigation of the methods employed for intra-plant transportation of materials in process. For example, back-breaking manual methods can be eliminated and movement of materials can be speeded up by using conveyors, trucks, elevators, hoists, and chutes. Dollies can be used in some places to facilitate handling of boxes. Skid platforms can be equipped with a suitable rolling device on which they may be elevated and moved about. Electric trucks save time in moving heavy loads over longer distances. Blower systems for loose raw materials are time savers. Compressed air hoists or lifts prevent strain and injury to employees handling quill boxes and similar loads which have to be dumped.

REDUCING ACCIDENTS

An undue number of accidents is likely to occur during periods of stress and rushed production, such as the present emergency, and it is especially important to be on the lookout for causes. Employees should be drilled continually in the importance of being careful and should be required to report the slightest scratch or bruise for treatment against infection. Among the most common—and most easily remedied—mechanical causes of accidents are wet and/or greasy floors; worn stair treads; exposed pulleys, gears, belts, and other machine parts; quills on floor, etc. A few inexpensive preventives, such as clean floors, safety treads for stairs, machine guards, and goggles, will pay for themselves by preventing one serious accident. Many of the larger mills today have regular first-aid clinics with a doctor or nurse in charge. Smaller mills can make part-time arrangements with a local doctor or

nurse and can place first-aid kits at strategic points throughout the plant with some one nearby instructed in their proper use.

Possible shortage of trained workers, rising chemical costs, and fabrication of textiles to the high standards of quality and uniformity insisted upon by procurement officers have greatly increased the necessity for control instruments of various types. A great deal of friction and dissatisfaction among workers is caused by unintentional errors involving the human element and the difficulty of fixing responsibility. Trouble from this source can be minimized by making fullest possible use of production counters, process-cycle controllers, moisture-content controllers, liquid-level controllers, machine-operation indicators, etc. Use of such instruments leads also to greater uniformity of products; economies in water, steam, and chemicals; and reductions in costs.

RAISING MORALE

Textile mills in England operating under war conditions have found that morale and efficiency of workers are raised by permitting them to purchase sandwiches or other light refreshments from lunch wagons which pass through the plant once or twice during each shift.

Several mills in this country have followed that same practice for some time and find that it is worth while. A smaller number of mills operate restaurants or cafeterias for their employees. The necessity for drinking-water fountains at convenient locations is widely recognized, and provision of salt tablets in summer to prevent heat prostration is becoming a more common practice.

Selection of chairs, work benches, and tables designed for comfort, as well as for utility, should not be neglected in any program for betterment of working conditions. Uniforms will save employees' clothes and improve their appearance—at the same time making it easier to spot an intruder in the plant. The automobile age has made parking facilities a necessisty. Modern sanitary toilets and washrooms are the rule today; and some plants go further and find that shower baths and individual lockers are a good investment from the standpoint of employee morale.

With increasing activity providing steadier work, there will be fewer instances in which employees will need financial assistance. However, companies which have not yet replaced outmoded "welfare systems" with a modern Credit-Union arrangement and with group life and hospitalization insurance should consider the advisability of doing so.

Housing of new employees may become a somewhat more serious problem if it proves necessary for mills to hire additional workers. Plants desiring to help employees with housing arrangements might well investigate the possibility of homesteads in the country—a plan which several companies have found to be very satisfactory on an experimental basis.

Has your mill these modern facilities which promote good working conditions?

Medical examinations	○
Job-analysis program	○
Automatically controlled air conditioning	○
Air filters or washers	○
Adequate general and local lighting	○
Conveyors, hoists, electric trucks, tiering machines, etc., for handling heavy loads	○
Floor scrubbers, vacuum cleaners, and traveling cleaners	○
Belt guards and other safety devices on machines, elevators, etc.	○
Safety treads on stairs	○
Well-equipped first-aid room	○
Production counters, process-cycle controllers, moisture-content controllers, liquid-level controllers, machine-operation indicators, and other instruments which reduce danger of human error	○
Restaurant, cafeteria, or lunch carts	○
Drinking-water fountains	○
Sanitary washrooms and toilets	○
Properly designed chairs, work benches, etc.	○
Individual lockers	○
Uniforms	○
Parking facilities	○
Financial assistance for employees	○
Protective insurance	○

Are you deriving the advantages of an up-to-date EMPLOYEE TRAINING PROGRAM?

SELECTION and training of employees—which have become increasingly important in recent years because of greatly increased labor costs—acquire even greater significance as a result of the national defense program. First complicating factor is the Selective Service Act (Draft), which undoubtedly will take numerous skilled workers and operating executives into military service for a year or more—possibly as high as 10%. This already is being felt in certain classes of workers, such as loom-fixers. A second drain on textile labor supply at present is the exodus of skilled mechanics to higher paying jobs in other industries, in Navy Yards, or on Government construction projects. The third problem is increased activity of mills, due to huge demand for military fabrics, which in turn will necessitate hiring of still more new workers.

Need for intelligent investigation and hiring of applicants has led to the establishment in most textile mills of central employment offices. In times such as these, this work assumes increasing importance. For the textile industry to fill national defense demands, production per man must be raised to the highest possible point. This means that labor turnover, due to improper selection, must be cut to the bone. It means that friction between worker and worker, and between worker and management, must be eliminated. It means that all factors in a prospective operative's background which might have a bearing on his attitude toward national-defense contracts must be carefully investigated. Employment departments should check an applicant's references and record his name, age, sex, nationality, descent, education, business experience, marital status, dependents, versatility (number of jobs capable of running), and general appearance and intelligence. A section of the record is usually reserved for a medical report. Some employment managers give intelligence and work-aptitude tests, but this has not yet become common practice in the textile industry. No competent employment manager tries to force a worker on an overseer, but takes the attitude that an overseer should have the right to reject any new employee. On the other hand, rejection by one overseer does not disqualify the applicant, as he might possibly be just the man for another department.

Acquainting the new worker with the general policies of the company, and with the importance of each individual's job in relation to national defense can be done by the employment manager, by the person who instructs him in his specific duties, or by means of a booklet. It is also important to inform the new worker concerning workmen's compensation laws, social security laws, and other legislation affecting his welfare. Safety habits should be drilled into the new employee from the beginning. Safety organizations, safety demonstrations, pamphlets, posters, prizes for safety suggestions, etc., can be used to get this message across.

TEACHING LEARNERS

The need for quick and thorough training of employees is being accentuated by national defense, despite the fact that recent legislative acts seem to have made this more difficult. In the past, a learner simply went into a plant and worked with an experienced employee until he was capable of handling a full job; but the wage-hour law has put a stop to this system of apprenticeship, and mills are required to pay learners a set sum during their training period. In the more thickly populated industrial areas, learners can attend vocational schools. However, schools of this type do not help isolated mills. A number of companies have set aside machinery outside the mill designated as "non-productive" on which learners may practice.

Some of the larger mills find it simpler to pay learners the minimum wage and run their own schools. Bibb Mfg. Co. has worked out a scheme in its Columbus, Ga., plant whereby a special instructor holds regular learner classes in the mill, teaching not only the mechanics of spinning, but also the philosophy and policies of the company.

ADVANCED TRAINING

Advanced training presents a somewhat different problem, but one which is bound to become more important as skilled operatives are removed from the industry due to one or another of the factors in connection with national defense mentioned at the beginning of this article. In the past it was possible for a worker to learn a better job on his own time by working as helper in another department. This system is not feasible today, as the mill must pay time-and-a-half for all training beyond the legal work week if the employee is engaged in productive work during the hours devoted to training. Most vocational schools are offering special classes for advanced workers; but, as indicated above, such schools are located only in thickly populated areas.

To encourage employee training programs for the achievement of higher skills, the Wage and Hour Division of the U. S. Department of Labor announced last month that attendance at such training programs by employees would not be considered working time requiring compensation by the employer, provided that such attendance met four criteria. Those criteria are: (1) Attendance on the part of the employee is in fact voluntary. No training program shall be considered voluntary if a condition of the employee's continued employment in his present job is attendance at the training program. (2) The employee shall not produce any goods or perform any other productive work during such periods of training. (3) The training course must be given outside of regular working hours. (4) The training course is intended to train the employees to a new, different, or additional skill, and is not intended to make the employee more efficient at doing what he has been doing in his present job. This announcement permits employers to determine readily whether a training program would be considered by the Wage-Hour Division to be "hours worked," and will assist them in setting up such programs.

A system of training battery fillers to become weavers during their regular work hours has been developed at Pacolet Mfg. Co., New Holland, Ga. There, the assistant superintendent, from time to time selects three or four promising young battery fillers and for an hour a day personally instructs them in the art of weaving. During this daily training period, the work normally done by the learners is absorbed by other workers. This system makes it possible for an unskilled operative to learn a better job and at the same time draw his

regular pay. The practice is on a non-productive dummy loom made of wood, which illustrates the basic principles of weaving without waste of material, or risk of injury to the operative. This idea is equally applicable to other departments, such as spinning, and—with a little assistance from the machine shop—might even be the answer to the problem of teaching slasher tending, drawing-in, and other skilled operations. Numerous mills have established classes for loomfixers, card grinders, etc.

One large southern mill handles its problems of teaching workers skilled jobs by allowing them to make up short time at their regular wage in other departments. That is, if an employee is putting in only 30 hr. a week at his regular job, he can make up the additional time learning a new job in some other department where there is a shortage.

Although the vocational schools are already doing a fine job in the development of skilled workers and in their more recent approach to the learner problem, most of these schools are in dire need of modern machinery, texts and properly-compensated teachers. The mills in the vicinity can supply these necessities with great benefit and at little cost to themselves. Textile manufacturers can also do much to encourage establishment of such schools in key locations where they are now lacking.

To offset possible shortage of labor in the near future and to reduce excessive labor turnover, several mills have adopted a system of teaching present employees how to run more than one job. This system is especially applicable to middle-aged workers beyond the draft limit. Such a plan not only will help take care of the present emergency, but also will make the organization far more flexible when the emergency has passed. Further, it will assure the employee a greater amount of steady work per year.

For the purpose of keeping an employee interested in his job after he has been trained for it, many mills have set up some form of wage-incentive plan. If properly devised, such a plan is advantageous from the viewpoint of both employer and employee. This is particularly true in periods of more-than-normal activity, such as that induced by current orders for military, naval, and aeronautical fabrics. In checking up on the efficacy of their wage-incentive systems, textile manufacturers might consider the possibility of coupling them with a merit system of promotion, as has been done in a few plants.

DEVELOPING FOREMEN

Foremen training—which has always been one of the biggest problems in the textile industry—is of utmost importance in the present emergency. Marshall Field & Co., at Spray, N. C., for several years has been developing a foreman-training program which is the keynote of its entire industrial relations set-up. There, in addition to regular plant meetings, the foremen gather every two weeks for the purpose of expressing their ideas on company policies, to develop creative thinking concerning day-to-day personnel problems, to gain all possible information concerning the company, to meet other executives in order to broaden their knowledge of industrial problems, and to develop leadership that will bring poise and confidence. Other features of the training program include participation in the activities of the Carolina Council, subscription to textile publications, and attendance at trade-association meetings.

Progressive mills are beginning to give greater consideration to the young man with potential executive ability. This problem was discussed in detail before a recent convention of the Southern Hosiery Manufacturers' Association by C. P. McCormick, president of McCormick & Co., Baltimore, Md., who has worked out a system of "Multiple Management" designed to recognize ability and give credit and financial compensation where due. His company has a junior board of directors elected on a merit basis and given a bonus from surplus earnings. Many of the members graduate to the senior board as their experience and ability increase.

The textile schools normally do a fine job in supplying the industry with potential executives and technicians. However, because of the national defense program, many of the younger graduates will be offered positions by the government or by armament industries, which may create a serious shortage of technically trained men. One way of preventing this is for textile manufacturers to offer special scholarships or other financial inducements to young men to study specifically for the textile industry.

The highly important matter of employee representation calls for careful consideration. Employee associations are likely to be branded as company unions. The McCormick plan advocates the establishment of an employee board of directors, similar to its junior board of directors, and without any strings attached, before some outside agency forms a shop committee. Just what can be done in an individual mill depends on a combination of current Labor Department policies and local conditions.

From the examples cited above of the elements of successful employee-training programs and from the accompanying chart, individual textile manufacturers can make a quick check to see if they are deriving the fullest possible benefits of an up-to-date system adapted to their own mills.

Has your mill these features of a modern employee training program?

Employee selection system	○
Safety program	○
Apprentice training plan	○
Classes for fixers	○
Vocational-school affiliations	○
Wage-incentive plan	○
Merit system of promotion	○
Courses for foremen	○
Executive-development program	○
Sponsoring of textile-school scholarships	○

Are you certain you have adequate RESEARCH AND TESTING FACILITIES?

A SWIFT, sure death blow to the philosophy of textile manufacture by guess has been dealt by our country's national defense program. In at least three distinct phases of textile mill operation, laboratories have important tasks to perform in connection with national defense. These are: (1) testing yarns, fabrics, and raw materials for compliance with rigid government specifications. (2) Checking on materials in process at each stage of manufacture. (3) Conducting research leading to development of new products and utilization of new materials in both military and civilian fabrics.

The Army, Navy, and Marine Corps buy textiles in such amazing quantity and variety that their purchases must, it would seem, have an effect on every mill. Each of these fabrics for military use, from the most important to the very least, must meet rigid specifications. This is a powerful reason why adoption of the research approach and installation of laboratory facilities is going to be a No. 1 job for all mills not already adequately equipped in this respect.

First, there is the subject of specific tests which are applicable to fabrics for national defense. In following paragraphs these are briefly described, and an indication given of the type of equipment which the mill laboratory must have to carry on such work.

EQUIPMENT NEEDED

A word about air conditioning of the laboratory is apropos. Authorities agree that it is best to have facilities which make possible maintenance of standard atmospheric conditions at all times. The government will okay regular tests made under prevailing atmospheric conditions, but requires that in case of any disputes, materials to be tested must be in standard condition.

Precise methods of determining percentage composition as regards various types of fibers present in mixture fabrics are specified. Tests include physical—observation, burning, microscopic study, dissection, etc.; and chemical—application of color-changing reagents, immersion in solutions which dissolve one component, and the like.

Equally accurate methods for both qualitative and quantitative determinations of non-fibrous materials present in textiles are prescribed. Percentage of sizing and finishing compounds, and other materials with which the fabrics are treated, or which become a part of the cloths during manufacture, must be closely controlled. For such tests, appropriate equipment includes drying ovens, a Soxhlet or similar extractor, necessary chemicals, facilities for heating solutions, etc.

Minimum acceptable breaking strengths are also included in government textile specifications. For these tests, pendulum-type testing machines are required. Mills producing goods covering a range of weights will probably require two or more tensile strength testers, calibrated for fabrics of high and low tensile strength. Generally speaking, strength tests on Government fabrics must be made by the grab method, although for some purposes strip tests are required. For obtaining data on fabric elongation, tensile-strength testers should be equipped with suitable recording devices.

Facilities should be available in the laboratory for accurately checking on weight, length, and width of fabrics. Pick glasses, rules, etc., for determination of ends and picks or wales and courses per inch are also needed. Thickness is an important factor in fabrics for certain military uses; for instance, parachute cloths; micrometers of the dead-weight type, accurate to 0.001 in., are specified for making these tests.

The government also wants to know about the color fastness of the textiles it buys. For fastness-to-light tests, either exposure-box or Fade-Ometer tests may be required. For testing fastness to weather, open-air exposure facilities are necessary. For laundering or washing fastness tests, a Launder-Ometer or similar machine is used, followed by pressing with a heated iron. Facilities for testing fastness to distilled water, salt water and soap, acid and alkaline perspiration, and laundry agents containing active chlorine, are also needed. These comprise beakers or other suitable containers, distilled water, and the various chemicals used in preparing the appropriate standard solutions. A Crock Meter, for testing fastness of dyed textiles to rubbing, is also a necessity.

For testing fabric shrinkage in laundering, a reversing wash wheel of the cylindrical type is specified. Suitable drying equipment is also required, as also is a flat-bed press or suitable hand iron for pressing samples.

Water permeability and air permeability tests are required on some fabrics. Special equipment developed for these tests is described in Government literature.

These, in brief, are the paces through which Government inspectors will put your cloths; and through which, in fairness to yourself, you should put them during experimental work, sample production, and full-scale manufacturing. Mills not large enough to install laboratories can have tests run for them in one of the many commercial laboratories which specialize in this type of work.

LABORATORY CONTROL IMPORTANT

The second important avenue through which textile laboratories can assist national defense is in laboratory control over all processes through which fibers pass during their transformation into cloth. An efficiently operated control system helps to insure minimum re-runs, to keep down the percentage of rejected merchandise, and to make possible delivery of the most cloth in the least time. Laboratory control of processes is helpful always, and is even more important in times of stress. It assists by checking at every step, to make certain the fabric which comes off the delivery end of the last machine is the fabric wanted, and not one which has been affected, adversely or otherwise, by some factor on which adequate or accurate data were not available.

Laboratories should test stock before production is begun and make sure it is satisfactory. Staple length, fiber fineness, percentage of natural oil contained, etc., are a few of the things which might be determined. In addition, oils or other substances which are to be added to the stock should be tested to make sure they are up to standard.

The same procedure applies at every

stage of manufacture. The yarn is tested before it is spun into cloth. Turns of twist per inch, direction of twist, breaking strength, composition of yarns containing two or more components, and other like factors should be given consideration. At this point, also, sizing materials should be tested.

After weaving or knitting, physical tests will indicate whether the fabric contains sufficient ends and picks to give the desired finished count, whether it has sufficient tensile strength, and whether in all respects it is up to par. Dyes to be used should be tested, too. By making small-scale comparative dyeings of a standard dye sample known to be of correct strength and shade, and of the dye lot to be used in production, the laboratory can make sure in advance that the cloth will match the sample submitted.

The third function of laboratories, in connection with national defense, is in development of new products and utilization of new materials. National defense is going to require increasing use of research facilities in manufacture of fabrics for civilian use. Raw materials customarily utilized for civilian purposes are being increasingly requisitioned for the country's armed forces. Inevitably, this means growing substitution in civilian fabrics of such materials as are still available. Development of methods for handling these materials, and elimination of such "bugs" as may appear, is a task for the mill laboratory.

Examples of such substitutions are already with us. There is a scarcity of cotton in longer staple lengths, since imports of Egyptian cotton have been stopped. For uses in which short-staple cotton is not satisfactory, high-strength rayon in either continuous or cut form will undoubtedly be employed.

Again, since serious difficulties may be experienced in securing foreign wool, normally imported in large quantities, it is apparent that defense requirements for woolen fabrics are going to force use of other fibers in civilian attire. More rayon staple in carpets, and in suitings, overcoatings, dress goods, and other apparel fabrics will probably be the answer. Casein, soy bean, and other protein synthetic fibers may also come into the picture.

Serious curtailment of our silk supply—all imported—or increase in demand for silk for defense purposes would necessitate greater use of synthetics in knitting of women's hosiery and underwear. Rayon, Nylon, and Vinyon could fill this breach.

There is also the necessity of development of new fabrics for military use. There are two angles to this. First, numerous military textiles contain raw materials of foreign origin. Development of substitutes containing only domestically available materials is necessary. Second, new methods of warfare have made desirable use of different kinds of uniform and other fabrics for certain purposes. More of these needs may develop. In this connection, mill laboratories should collaborate closely with military procurement officials.

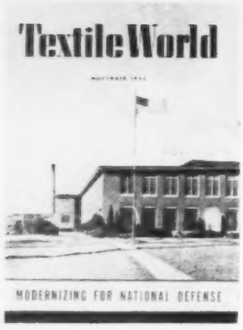
NEW FABRIC DEVELOPMENT

Examples of new-fabric developments for military use are also available. For cartridge bags and parachute cloth, silk has been considered the only really satisfactory materials. From most recent reports, it appears that use of synthetic fibers such as Nylon and Fortisan will make us independent of silk for parachutes, eventually providing better fabrics than those made from natural fibers. It is also known that a satisfactory substitute for silk cartridge bags has been developed, although officials are not yet ready to disclose what it is.

The point is that all this new fabric development and all of this substitution of one material for another, calls for experimental work. Mills must determine best methods of procedure, which processes can be eliminated and which need to be added, what alteration and readjustment of machines and methods is called for, how particular fabrics are or are not satisfactory. This experimental work, if carried out by the research department, will be less expensive, more precise, and less dislocating to regular production machinery and personnel than would be the case if it were attempted on regular production machinery, and with regular personnel.

Has your mill laboratory this essential equipment?

- **Air-conditioning** ○
- **Twist testers** ○
- **Tensile- and bursting-strength testers** ○
- **Thickness tester** ○
- **Abrasion tester** ○
- **Microscopes and pick glasses** ○
- **Accurate balances** ○
- **Drying oven** ○
- **Skein and inspecting-board reels** ○
- **Sample-dyeing equipment** ○
- **Fading testers** ○
- **Launderability testers** ○
- **Crocking tester** ○
- **Waterproofing tester** ○
- **Small-scale productive equipment for sizing, finishing, and similar tests** ○



Are you ready to handle new situations faced by your PURCHASING DEPARTMENT?

SOUND PURCHASING of textile mill supplies—burlap, dyes and chemicals, machine parts, piping, loom supplies, ad infinitum—is more important since the outbreak of the European War than ever before, making it vital for a mill carefully to analyze the supplies-market situation and to install a modern system of purchasing and supply-room management. The immediate problem facing any purchasing department concerns those supplies directly affected by the war.

Has your mill these modern aids for its purchasing department?

- Supply-room records ○
- Price-trend charts ○
- Minimum-stock system ○
- List of alternate sources ○
- Data on substitutes ○
- Manufacturers' catalog file ○
- New-product investigation system ○
- Contact with laboratory ○
- Provision for regular sampling ○
- Standard specifications data ○
- Arrangement for group purchasing ○
- Sound salesmen reception policy ○

A study of the supplies markets—inventories, productive capacity, war uses, alternate sources, etc.—can save the mill real money during the emergency and after it passes. Burlap, for example, jumped from 4.35c. a yd. in August, 1939, to 9.61c. a yd. in October, 1939. Mills which doubted the justification for such a large and sudden increase shifted to osnaburgs or heavy kraft paper. Ultimate outcome was that burlap dropped back to 4.8c. a yd. Prices in general have advanced about 10% and may continue to rise as the war progresses, but hysterical buying should be avoided, as supply of most domestic products is ample for the present. There may be shortages of certain imported products, and some textile machinery manufacturers may have to give priority to Government defense orders. Therefore, it may be necessary to set up special minima for stocks affected directly by the emergency.

To keep abreast of price trends, one large purchasing agency has a system of loose-leaf notebooks in which are entered daily quotations from each major supply house and data on inventories. This agency also makes use of *Business Week* and publications of the National Association of Purchasing Agents in following price trends. Purchasing agents for individual mills can easily simplify this system to fit their own needs.

An alphabetical file of manufacturers' catalogs can be made more valuable by cross-indexing on cards each product used by the mill. The cards, which are filed alphabetically by product, contain names of all manufacturers whose literature is contained in the catalog file. Alternate sources can be listed in this same index.

Purchasing agents can keep posted on alternate supplies and sources of supplies through such media as manufacturers' literature, the Textile Equipment News Department of TEXTILE WORLD, advertisements in trade publications, and the latest edition of "Textile World Yearbook and Catalog."

Laboratory tests — particularly of new or unknown products—will permit savings in money and determine the suitability of a product for a given use. Mills of small or medium size (other than dyeing and finishing plants) seldom have laboratory facilities of their own; but can have tests made on a fee basis by commercial testing laboratories or by textile schools. Records of all products tested can be kept in a special file in the purchasing department. Whether the mill does its own testing or has it done outside, provision should be made for regular sampling of dyes, chemicals, and other commodities.

Setting up of specifications for certain products often results in worthwhile money savings. One mill, for example, developed a set of paint specifications by testing different brands on a special row of village houses. Frequently government specifications can be modified for textile use.

Adequate supply-room records are essential if shortages of supplies are to be avoided. A large southern cotton mill has worked out a system which is so efficient that it employs only one man per shift in its huge supply room. One of the most important records is a perpetual inventory of important supplies. A special ledger contains the date of each purchase, amount, cost per unit, and total cost; amount and cost of supplies used; and carry-over each month. A second ledger contains supply costs broken down by departments and per pound of goods. Machinery purchases are recorded in still another book, along with serial numbers, horsepower, voltage, and other pertinent facts. A parts-diagram included with these data often obviates the purchase of a complete piece of equipment. Machine parts are requisitioned by a number, a master card-index system describing and locating every item in stock.

A sensible salesmen-reception policy is one of the most important phases of purchasing. The modern salesman-engineer is in a position to supply the purchasing agent with valuable information and service. Any purchasing agent who keeps a salesman waiting needlessly or who refuses to listen to his sales story may be costing the mill many dollars in reduced costs.

In the South particularly, many textile mills make use of a central purchasing agency, even though they maintain a local purchasing department. A central purchasing agency serving a large group of similar mills offers the following advantages: special prices eliminated; price trends and inventories closely followed; rumors concerning shortage or price increases quickly run down; results of tests in other mills quickly known.

Are you organized to deal with new problems met by your SALES DEPARTMENT?

IT IS a habit—and not a bad one—to start all discussions of textile merchandising with the hackneyed observation that there is no common denominator in textile selling: that there are almost as many routes to the market-place as there are kinds of mills and products.

But in relating textile sales-methods to the defense program, there is at least this much in common: A majority of the mills have as immediate or potential customers the United States Government, foreign Governments, the Red Cross, and other agencies entering into the present world emergency. In fact, in one of the editorial pow-wows in this office recently, a staff-member made the observation that practically all textile products, with the exception of women's full-fashioned hosiery, were involved in the defense program. He was silenced by the remark of another editor, who had evidently been through the First World War with his eyes wide open, that the establishment of cantonments for draftees placed a necessity upon the local gals to increase their budget allowance for stockings—presumably as lure. The discussion went further, but shall not be reported here.

Be that as it may, the fact remains that Government and allied purchases present a definite sales problem to the textile industry. To too many mills this problem is taken as a casual one: an opportunity to bid on products it can supply, and to rejoice over a successful bid, or regret an unsuccessful one.

There is much more to this whole business than that. It is a two-way problem. From the standpoint of self-interest, there is the question of intelligent bidding in order that contracts may be secured, which will mean profitable business for the mill. From the national standpoint, there is the necessity to bid only on as much of a contract as the mill can deliver on wanted dates, and at prices which—in the cases of scarce products—do not "hold up" the Government.

Even this is over-simplifying the problem. There is the opportunity, and there is also the obligation, to explore those products on which Government demand exceeds apparent supply, and to adjust the mill program, where possible, to their manufacture.

All of this is primarily a sales problem. It cannot be left to an office-manager or to a superintendent, or even to the "boss"—no matter how able each is in his own job. It is in the domain of the sales executive.

Here, of course, the size of the mill enters in. We know one large organization which has designated one of its most important sales executives to devote his whole time to this Governmental relationship. Smaller companies have not spare personnel of this type. But at least they can make it one man's job to handle this problem.

Such a man should follow bids and awards most carefully; should compare prices at which such awards are made; should relate them to his own mill-costs; should keep in touch with Government agencies and with his trade associations; should particularly keep in touch with his own production department; and should be in equally constant consultation with the man or men in his company responsible for what may be termed "normal" sales.

The oft-ridiculed "conference" habit is in order here. Periodic check-up meetings between sales and production executives are necessary in order to preserve an effective balance between military and civilian orders, not only in obtaining them, but in maintaining their simultaneous output.

It will also be necessary for the sales department to be aware of the part which specifications and test-methods play in military and naval orders. The mill which has been turning out industrial fabrics has become used to this phase, but the mill which has been producing fabrics for civilian apparel and household use may find it an entirely new zone of exploration. In all of this, the sales executive, as the "front man," must play an important part.

Then, as months and years go on, there will probably be increasing pressure on the supply of natural fibers, and an increasing necessity to substitute synthetics. This, too, is a sales as well as a production problem.

With this development, there will come an intensification of the already articulate demand for consumer standards. Those companies which have started fabric-identification programs are in the clear; others must catch up rapidly.

There is also this thought: Textile mills have been geared up to a buyers' market. A sellers' market is approaching—and in fact is here in many parts of the industry. It demands a different psychology—and one which in its own way is as difficult as is that of a buyers' market. On sound merchandising policies may depend the resistance to runaway markets and prices.

Is your mill organized to deal with these new problems confronting your sales department?

- **Securing Government business** ○
- **Getting orders from purchasing commissions of foreign countries** ○
- **Obtaining business from Red Cross and similar agencies** ○
- **Revising line to include substitutes for present standard products** ○
- **Adjusting merchandising psychology to a sellers' market** ○
- **Labeling, where product reaches user with mill identification** ○

Are you cutting costs by utilizing best practice in ACCOUNTING AND FINANCE?

ENACTMENT on Oct. 11 of an amendment by Congress to Sections 3477 and 3737 of the Revised Statutes to permit assignment of claims under public contracts has been hailed by the banking fraternity as a direct and essential step toward facilitating financing in industries involved with the national defense program. A Government contract for $1,000 or more is now bankable, as it may be assigned to "a bank, trust company, or other financing institution, including any Federal lending agency." A new contract form to meet these conditions has been issued.

Loan officers of banks and trust companies, and executives of factoring organizations are not only responsive to needs of industry for financing, but are going out looking for business with ample funds available for placing. In considering a loan on a Government contract, they point out that they rely partly on the contract and partly on the standing of the firm which has the contract. Most of the firms which have the largest contracts in textiles already have banking connections and their business is likely to go through very much as it has in the past.

In general there are two kinds of loans: (1) on materials, whether before, during or after manufacture, and (2) for plant improvement or enlargement. Most military textile orders are now being let to concerns with existing plant facilities, but there is rapidly increasing need here for modernization through machinery installations, some of which can be paid for out of usual funds while others must find special methods of financing.

The factor, who has always been important in textile financing, is moving to increase his service. His function is primarily the purchase of accounts receivable without recourse. He can, however, lend money against suitable merchandise security. Warehousing of goods or materials in licensed warehouse or in "field" warehouse gives the basis on which a factor (or other banker) may advance two-thirds of the value involved. The immediate cashing of invoices by the factor keeps the mills' resources liquid, and permits other use of its working capital.

A mill which adds a shift to its operations at once increases its capital needs for pay roll, raw materials, and inventory, and the immediate payment for its shipments by the factor may relieve the immediate need for more funds without any strain on its credit as might result from borrowing. Other authorities foresee more rapid capital turnover without need for greatly increased sums.

Cost accountants agree that most progressive textile mills are well advised on their costs, but they recognize that mills which are starting up after long shutdowns and new enterprises may not be operating sound cost systems. They recommend that such a mill carefully investigate the best cost practices in its branch of the industry and adopt them as step number one in entering on Government or civilian business.

Authorities see little need for any changes in bookkeeping systems, provided that system is already up to date. If it is not, the present is a timely moment to put the bookkeeping department on a thoroughly modern basis, particularly since, with large Government business, accounting will be temporarily simpler due to manufacture and shipment of larger lots, to reduced variety within the lot, and to sale of a large capacity to one customer.

Although it is the aim of banks to be helpful in plant enlargement, they favor self-liquidating loans repaid out of earnings. For longer term borrowing many business men are disposed to turn to RFC. Some machinery manufacturers are arranging the financing for their clients, putting the machinery purchase on a time-payment plan with a financing company or otherwise. In other cases a rental basis is possible.

As time goes on tax problems will loom more importantly as the Government arranges its own finances to pay for the defense program. Sound financiers foresee dangers of possible inflation which can by proper planning be avoided. The National Industrial Conference Board comments that "any fiscal procedure that provides the Government with purchasing power without depriving the civil population of an equal amount can be considered inflationary."

Credit men in the textile field are regretful that a type of "war prosperity" may defer critical analysis of the industry's own intimate problems. Emphasis on "our rights" without corresponding stress on "our duties" is a cause for concern in the maintenance of "man's confidence in man" on which credit is fundamentally based.

Is your mill availing itself of these modern accounting and financing practices?

- **Best cost-accounting methods** ○
- **Improved bookkeeping system** ○
- **Factoring services** ○
- **Local banking facilities** ○
- **Borrowing on inventory through "field warehousing"** ○
- **Time-payment purchases of equipment** ○
- **R. F. C. loans where needed** ○

Are you getting the most benefit from your TRADE ASSOCIATION ACTIVITIES?

THE ABOVE is a "Man Bites Dog" type of news-heading. Ordinarily, the question is phrased "Are you doing your bit by your association?" In reverse English, we are asking "Are you getting your bit from your association?" If, after answering the accompanying quiz, you find you aren't, the fault may be yours, or it may be your association's, but in either case you should have the answer.

The national defense program places upon the textile association a responsibility at least as great as any it has ever faced. It offers, accordingly, to manufacturers an opportunity to secure from their trade organizations a new type of help, in addition to the established services maintained by any well-run association.

First and foremost, your association should be in close touch with the defense program as it develops in Washington, with particular reference to the interests of its members. It should be an authority on textile bids and awards affecting its field. It should know what a change in specifications means to its mill members. It should be ready to plead its case, if such a change is detrimental to the interests of its industry; and, equally, to rally support of its members to the needs of the defense program, if and when such support lags.

We know textile association executives who already have been able to correct misunderstandings in Washington, to the mutual advantage of both the defense program and the industry.

Are you getting that kind of service from your association? If not, you may find you are not availing yourself of a service which you didn't know to exist. Or you may find your association is lagging. In either event, knowledge of the facts can lead to effective action.

The second most important activity of an association in this emergency is to tie in, through its own committee activities, with similar local, State and national organizations. The defense job merely starts at Washington. If it ends there, it is beaten before it gets a real start. Its successful prosecution depends upon the individual States, the individual communities, and the individual industries. Has your association an active defense committee which is completing this chain? If so, are you helping it to function? If not, are you doing anything to bring such an activity into being?

The next most important activity of an association, in the defense program, is the maintenance of a technical service wherefrom members can secure advice on manufacturing problems involved in the production of yarns, fabrics, or knit goods for military use. Has your association such a service? If so, are you using it? If it hasn't, what are you doing about it—as a member?

In addition to these special defense services, the standard associational aids assume new significance in this emergency. Never before has a statistical department been more vital—to aid in uncovering bottlenecks, and to warn against production sprees, when and if the enthusiasm of the moment induces them. Never before has a new-uses department been more potentially helpful, in developing new civilian outlets which will tend to compensate for the unbalanced economy inevitable in times of military preparedness. Never before has a cost-department been more useful, in aiding members to check on the rising costs inherent in boom-times. Never before has advice on existing and pending legislation been more demanded, as protection for manufacturers and as an aid to the national program.

One last thought: In addition to the concrete services mentioned previously, there is one great zone of activity which most associations barely scratch: the development of sound and broad policies for their industries. Never before has this type of enterprise been more needed than today. Who is going to pay for the defense program—and when—and how? What is the future of employer-employee relations, under conditions of an emergency which will be with us for years? How can production and price policies be kept sane, within the law?

These questions must be answered, if we are not to face another drop into depression.

Is your association organized to answer them? Are you doing your bit?

Is your company making full use of these modern services offered by trade associations?

- Information concerning government purchases ○
- Participation, by committees, in the defense program ○
- Technical help of applied research type ○
- Statistics, as production-control guides ○
- Advice on existing and pending legislation ○
- Advice on new outlets for your products ○
- Advice on sound cost-accounting methods ○
- Help on policy-forming problems ○
- Contact with headquarters office ○

Are you obtaining the maximum efficiency through your present POWER EQUIPMENT?

INCREASED activity in a textile mill translates itself immediately to the plant engineer as a demand for more power. It also imposes an additional burden on the power transmission system. To generate and transmit the additional power necessitated by the defense program involves, first, a check up of present equipment; and, second, a decision as to what additional equipment may be required.

The size of the mill, variations in load, peak load, heat balance, and other local conditions will determine the most satisfactory equipment. Feedwater treatment is important as a means of preventing scaling and also for permitting use of the modern steel-tube economizer, which will increase the over-all efficiency of the plant. New boilers can be operated at 600 to 700 lb. and with temperatures of 500° to 750° F., and, where topping units are employed, this might be stepped up to 850 lb. at 850° F.

On old installations cracked and bulged refractory walls indicate losses of efficiency and capacity. A possible solution is to replace them with newer type suspended walls, or with water walls—either of which will tend to increase the efficiency of the boiler.

AUTOMATIC STOKING

Automatic stokers can be quickly and easily installed in most cases. Emergency oil burners installed over stokers provide a means of taking care of peak loads. Where the capacity of a boiler is limited by natural draft, a large-capacity, low-pressure forced-draft fan might be installed with a minimum of duct work and simple control equipment. Existing fans, either of the forced-draft or induced-draft type, might be stepped up by increasing the speeds, installing new wheels, or putting in new units; in any case, the manufacturers should be consulted. Under certain conditions, feedwater heaters and air pre-heaters will increase plant efficiency. In plants of 500 hp. capacity, and over, coal-storage and handling equipment is justified. In large plants, ash-handling equipment may be economical, depending on labor costs.

Automatic combustion control, flow meters, gages, recording instruments, are important details. CO_2 indicators or combustion indicators are essential if true combustion conditions are to be known. A complete plant check-up to see how existing equipment can be modernized to meet conditions imposed by the defense program should not overlook the various safety features which are, or might be provided—such items as low-water alarms on boiler drums, and thermometers on lubricating oil lines.

Modern condensing turbines operate at pressures of 400 to 600 lb. and with temperatures up to 750° F. In some cases the topping turbine can be utilized to secure increased capacity with pressures stepped up to 850 lb. at 850° F. Gondensers may require cleaning, and air ejectors or vacuum removal pumps may be required. A careful turbine inspection might result in the replacement of eroded or worn blades. An existing turbine might be made to carry an increased load by boosting the super-heat, and increasing the steam pressure. The manufacturer's advice is essential here. Often it is possible to increase the available power from a plant by installation of capacitors to correct the power factor.

A check of emergency-service equipment may reveal the advisability of installing a diesel or other auxiliary engine. Need for additional process steam is being felt in plants which have received large orders for military fabrics required in dark shades. To meet such demands for process steam at a point remote from boilers and requiring long runs of piping, a low-pressure boiler with temporary steel stack may be the answer.

Switch-boards in the power plant should be equipped with rotating machine protective equipment and direct-acting voltage regulators. Air circuit breakers can be used on 600-volt circuits to replace oil circuit-breakers; lower maintenance cost and greater dependability will result. This refers equally to switchgear controls. Completely metal-inclosed switchgear offers many advantages. Unit substations—compact, safe, reliable, and self-contained—can replace to advantage the old loosely connected type of transformer station with its unsightly array of poles and timbers. The flexibility of open wiring can be matched by modern bus-bar distribution.

Efficiency of the system can be increased and time can be saved by a careful study of controls being used and those that might be used. The combination switch—embodying in one package all essential controls, such as disconnect, motor starter, fuse, and overload device—should be investigated. In some cases air circuit-breakers might replace fuse disconnects to advantage. Where purchased power is being used, a valuable adjunct is the time delay under-voltage device. Full voltage across-the-line starting in many cases might replace the older reduced-voltage types. Existing controls can sometimes be modernized to advantage by adding temperature type over-load relays which function from line voltage.

A portable case of instruments is invaluable for conducting tests on load conditions throughout the plant. Or permanent sockets might be installed at certain points in the power-transmission system to accommodate separate portable instruments for testing.

For many lines of defense work the open type, screenless, self-cleaning motor should be considered—certainly for those applications where in the past an accumulation of lint and dust has introduced a fire hazard and made cleaning a burden.

MOTOR DRIVES

Variable-speed motors in a wide range of sizes and speeds, both alternating and direct current, are obtainable for special services, and their practicability should be investigated in each case. Where looms are direct-connected, a high-inertia type motor might be of help in smoothing out the peak loads and decreasing the time-out of the loom. It is well to provide a high factor of safety in motors procured for this service. One should not overlook the possibilities of adjustable-speed motors for such applications as forced and induced-draft fans in the boiler room, on compressors where there is a definite demand for prompt variation in speed, and on roving and spinning frames.

Where motors require re-winding, due to overload or high temperature

conditions, glass insulation may solve the trouble.

While variable-speed motors have broadened the field of application of rigid transmission, the more flexible belt or chain-driven connection is still used in a majority of cases. Roller chains are suitable on many low-speed operations where positive action is desirable. High-speed chain drives, operating in oil-tight housings, require little attention and possess long life.

In the selection of belts care must be exercised to provide sufficient strength and contact. The high operating efficiency demanded by national defense requires careful consideration of all requirements in order to determine correct belting practice. The American Leather Belting Association has published some valuable tables to guide in the selection of proper sizes for various speeds, pulley sizes, and other governing factors.

On many short center drives, V-belts will give good results. They can be used with V-pulleys for both drive and driven shaft, or with V-pulleys on the drive shaft and flat on the driven. Proper belt tensions can be secured through the use of pivoted motor base, sliding base, or idler pulley, in case flat belt is used. Whether leather, rubber, or an impregnated belt is used depends on the special requirements of each particular case.

Friction loads can be considerably reduced by proper re-alignment of long runs of shafting; and application of ball or roller-bearing type hangers will also assist in this respect. Couplings of the flanged type with tapered bore and split sleeve which can be installed without the necessity of providing keyways in the shaft might prove economical. The several types of flexible couplings available for special applications should be investigated. Belt replacements can be reduced, and production sometimes bettered by replacing the old type tight and loose pulley arrangement with a properly designed clutch.

Variable-speed transmission devices should be investigated for application to such drives as slashers, tenter frames, drying cans, etc., and controls selected that will facilitate the operation. A simple device for obtaining a 3 to 1 variation in speed from a constant-speed motor is to provide an adjustable base and substitute a special variable-speed pulley for the usual motor pulley.

In mills employing the lineshaft system of power transmission, it is frequently possible to reduce friction loads, reduce slippage, improve appearance, and maintain predetermined speeds by a carefully planned modern group-drive installation. A step further in this direction is by use of individual motor drives. The economies of each system will frequently determine the type of drive selected.

For belt-driven looms, a clutch flywheel, commonly known as the Energy drive, may permit higher production through increased speed.

Is your mill making most effective use of this modern power-generation and transmission equipment?

- **High-pressure boilers** ○
- **Pulverizers and automatic stokers** ○
- **Mechanical coal and ash handlers** ○
- **Feed-water softeners and heaters** ○
- **Flow meters and gages** ○
- **Air preheaters** ○
- **Low-water alarms** ○
- **Economizers** ○
- **Forced- or induced-draft fans** ○
- **CO_2 recorders and combustion indicators** ○
- **Superposed turbines** ○
- **Emergency-service equipment** ○
- **Transformers and switchgear** ○
- **Ample wiring and suitable controls** ○
- **Capacitors** ○
- **Up-to-date special-purpose motors** ○
- **Portable instruments** ○
- **Improved belt and chain drives** ○
- **Suitable clutches and couplings** ○
- **Anti-friction bearings** ○
- **Variable-speed devices** ○

To enable the mill to do its part in the national defense program, ample and uninterrupted power is the first consideration; power cost, while important, is secondary. This fact should not be lost sight of in checking up to make certain that power-generating and transmission equipment is at peak efficiency.

Are you sure of the prime condition of your BUILDINGS & PROTECTIVE SERVICES?

IF TEXTILE MILLS are to function at the high efficiency demanded by the defense program, buildings and protective services must be kept in prime condition. Otherwise, serious delays or interruptions of production may result. Protective services which are adequate in normal times may be entirely inadequate during the emergency. A check of roofs, chimneys, wiring, lighting fixtures, etc., may reveal conditions which should be remedied.

SABOTAGE AND VANDALISM

Danger of sabotage and the fact that many mills are finding it necessary to hire new employees with no previous experience in the textile industry bring added importance to protective services of all types. Watchmen and guards must be impressed with the necessity for constant alertness while on duty. Proper precautions against sabotage now will insure against future damage from this source, as well as against burglary and malicious mischief. Efficiency of watchmen and guards can be greatly increased by suitable fences around the plant, by modern alarm systems, and by lighting of vulnerable spots. A conventional method of lighting a fence line, for example, is to place a narrow-beam 1,000-watt flood-lighting projector at each corner and additional projectors about 300 ft. apart, all aimed in the direction the guard is patrolling. It may be desirable to direct most of the light outside the fence in order to leave the guard in relative darkness, or to paint white an opaque fence or dark wall so as to silhouette an intruder.

More immediate than the danger of sabotage is the hazard of accidental fires. Fires not only interrupt production, but may also destroy textiles in their fabricated or partially fabricated state. Despite the advances which have been made in fire-protective equipment, the number of fires in textile mills is on the increase. The average damage caused by fires in textile mills is comparatively small, but any fire can become serious. In checking his fire-protection facilities, the textile manufacturer can receive valuable aid from the fire-protection engineers employed by his insurance carriers. Not only can these engineers advise him as to the adequacy of his sprinkler systems, extinguishers, cut-offs, fire doors, alarms, etc., but also on the organization and training of a plant fire brigade. This latter phase of fire prevention requires special attention at this time when mills are starting up additional shifts and are confronted with the possibility of losing the services of some of their overseers and other key men because of the Draft.

Finishing plants and other mills using large quantities of water may find it necessary to provide a system of water-supply protection. Although malicious tampering with industrial water supplies is unlikely, pollution by industrial waste or by algae growth must be guarded against. Textile men are well aware of the necessity for an ample supply of pure, soft water if seconds are to be avoided and certain wet processes are to be carried out at highest possible speed. Therefore, a complete investigation of the adequacy of the water supply will include a check-up of the purification and softening equipment.

Flood control is not directly related to the defense program, except for the fact that a flooded mill will delay production of and cause damage to textiles which may be needed badly by the Government. Flood control usually is such a complicated problem that it is advisable to employ a competent engineer to study local conditions. For example, a large engineering firm making a recent flood-control investigation for a mill found it necessary to make an airplane reconnaissance, to study topographical maps, stream sources, channels, etc.—ordinarily not feasible for a busy plant engineer to tackle. If an expert is not available, flood danger can be reduced by cleaning channels of streams and by erecting dams and dykes at vulnerable points.

ROOFS AND CHIMNEYS

A logical place to start checking the condition of the building itself is the roof. Life expectancy for textile mill roofs can be greatly increased by regular inspection and repair of danger points, such as blistered places; loose gravel; clogged conductor heads; and flashing around parapet walls, monitors, joints, and seams. The ever-present danger of wind damage can be reduced by anchoring the roof with metal strips from beams to strong upright supports. A good time to insulate against heat losses and condensation—automatically improving working conditions—is during a complete reroofing job.

Uninterrupted production of steam is essential to expeditious manufacture of military textiles. Hence, chimneys or smokestacks—brick or metal—should be inspected regularly for cracks or holes, especially near the top. A cracked brick chimney should be pointed up immediately and banded with steel. Cast-iron caps keep maintenance of brick stacks at a minimum. Metal stacks should be painted with heat-resisting aluminum or asphalt-base paint; guy wires should be inspected regularly to prevent damage during high winds. Smoke breeching needs regular attention and painting.

Keeping floors, stairways, and elevators in good condition is an aid in avoiding accidents to workers. For example, floors—wood or concrete—when they begin to wear deteriorate rapidly under heavy usage and soon become dangerous. Use of square-edge wood flooring makes it easier to replace (one board at a time) worn places in vulnerable spots, such as in alleys or around drinking fountains. New penetrating finishes can be used to preserve wood floors, eliminating soap-and-water scrubbing which encourages splintering. Cracks in concrete floors should be patched immediately with one of the new materials which permit formation of a hard feather edge. In laying a new concrete floor where there is likely to be considerable moisture or oil, use of a special non-slip material in the topping should be considered.

Worn-out wooden treads on stairways should be replaced either with new maple treads or special metal safety treads installed by cutting the wood to fit. Weak bannisters should be strengthened.

Installation of fully-automatic elevators with controls for individual operation will help in a small way to offset possible labor shortage. The safest system of maintenance is to contract with an elevator company to supply expert inspection and service at regular intervals. If this procedure is not

feasible, the next best course is to make elevators the special responsibility of some individual, whose duty is to see that gates and doors, cables, brakes, electrical contacts, and winding heads are always in perfect working condition.

Factors of importance in so far as comfort of workers and rate of output are concerned include heating, humidifying, ventilating, and lighting. Air-conditioning equipment, unit heaters, and controls should be inspected at frequent intervals to make certain that they are functioning properly. Setting up a regular schedule for cleaning reflectors and replacing burned-out lamps will insure maximum light with the facilities available.

Repainting of dark ceilings or walls to a lighter color will frequently improve visibility and improve morale. In fact, a well-planned painting program is essential if buildings are to be kept in the best possible condition. There are many little points to remember in painting which can be the difference between a good job and a poor one. For example, one should never put oil paint over a surface which has been whitewashed unless every bit of the whitewash is removed. Inside piping fixtures can be painted in accordance with a regular chart of colors to indicate the type of service. Wooden window sashes should be inspected regularly to see if the putty and ropes are in good condition and if the sills have dry rot. Steel-sash windows should be treated at the factory against rust before installation. Double glass will keep down condensation on windows, but usually it is considered more economical to install condensation traps at the window-sill.

Older mills should check walls and columns more or less regularly. Flashings should be examined and made tight or replaced, and outside walls pointed up. Wood columns are particularly vulnerable to dry rot at the base. Black stains on the side of columns or on beams supporting the roof indicate dry rot, which can be definitely ascertained by boring a hole or driving a nail into the wood. Cast-iron columns are recommended for replacement. Steel frames and glass blocks should be considered for new walls. Some of the newer plants are using glazed-brick inside walls for cleanliness and acoustical material on the ceiling to reduce machinery noise.

A survey of present and potential capacity of pipes and fittings, as well as condition of equipment, should be made in anticipation of extra demands during the emergency and because of possible future shortage of certain metal items. Selection of new pipes and fittings should take into consideration modern trends, including the use of corrosion-resisting materials and simplified designs, heavy-wall pipes of high-carbon steel for use with high steam pressures, threadless pipes and fittings which can be bonded together by heating a brazing alloy ring to give a smooth inside surface, asbestos-cement pipe for use underground, globe valves designed to prevent the wire-drawing action of steam under partly throttled conditions, steam traps with stainless-steel interiors.

Has your mill put into first-class condition its buildings and protective services?

Roofs	○
Chimneys	○
Floors	○
Stairways	○
Elevators	○
Walls and supporting columns	○
Windows	○
Paint	○
Heating, ventilating, and humidifying equipment	○
Wiring	○
Lighting fixtures	○
Pipes and fittings	○
Fire-protection devices	○
Sabotage- and burglary-protection devices	○
Water-supply protection	○

WIRING SURVEY

Condition and capacity of wiring also should be studied in view of extra demands now imposed. A planned wiring survey will determine present capacities, defects, deterioration, and obsolescence, as well as what parts of the system can be expanded. A diagram helps to identify various circuits, to isolate circuit troubles and to make tests of departmental loads and machine performance. The survey should start with the main service entrance and trace out and inspect all feeders, each group of sub-feeders, and branch circuits and equipment supplied by each sub-feeder.

Confronted by the many problems brought about by the defense program, textile manufacturers, if not constantly on their guard, may slight the upkeep of buildings and protective services. The foregoing discussion is not intended to be a manual on this phase of mill operation. Rather, its purpose is to outline an approach to the problem during the present emergency. In addition, the accompanying chart provides a means whereby one can determine whether sufficient attention is being given to the plant and its protection.

Textile World

Are you making fullest possible use of recent DYE & CHEMICAL DEVELOPMENTS?

THE IMPORTANCE in the national defense program of the many new dyes and chemicals developed in this country since the First World War can hardly be exaggerated. They will aid dyers and finishers to speed up production of fabrics to meet present government specifications. They will allow certain types of textiles for military use now made from imported fibers to be manufactured from fibers obtained in this country. They will make possible the development for military purposes of textiles superior to those available at present. They will permit development for civilian use of new fabrics equal to or better than those made today, regardless of the extent to which it becomes necessary to divert certain essential natural fibers to manufacture of textiles for the Army and Navy.

Most of the present government specifications for clothing and other textile equipage have been evolved over a period of years as the result of laboratory and field tests. On certain fabrics —those for uniforms, for example— fastness of colors, uniformity of shade, and excellence of finish are insisted upon. There is no need to discuss in any detail the way in which many of the dyes and chemicals made available in recent years make it possible to meet these requirements. Dyers and finishers have learned the advantages of these products in processing various types of textiles consumed in normal times and will quickly find how they can be employed with benefit in processing textiles for military use. For instance, to uncork any bottleneck which may occur in finishing military fabrics they naturally will turn to the use of wetting agents, water-conditioning compounds, improved detergents, and other chemicals which permit speeding up of the finishing processes. Use of vat dyes, which is now specified for many types of cotton fabrics, involves use of dyeing assistants that will promote leveling and good penetration, together with oxidizing agents and soaps or special detergents for obtaining shades of maximum fastness and brightness.

MODIFYING FIBER PROPERTIES

Silk, jute, Manila hemp, and flax are among the fibers which are normally imported and which are important in the manufacture of textiles for military purposes. Imports of these fibers may be reduced or stopped; and therefore the Government is seeking satisfactory substitutes. As imports of flax already have been cut off, the most urgent need is for substitutes for linen thread, linen webbings for parachute harness, linen fire hose for naval use, etc. Although use of synthetic fibers, such as Nylon and Fortisan, appears to be feasible in some or all of these applications, from the standpoint of cost and availability, cotton offers definite advantages, provided textiles made from it have the necessary strength, resistance to exposure, and other properties. It is widely recognized in the textile industry that some of the newer chemicals effect marked changes in the properties of cotton. Hence in development of cotton thread, webbing, etc., for use in place of linen, those compounds which increase tensile strength and provide protection against mildew and other damage which may occur on exposure to weather appear to be particularly important.

In order that the soldier may be furnished with clothing and other equipage which are most suitable from the standpoint of morale, durability, comfort, and tactical considerations, there has been set up machinery within the War Department for the testing and adoption of military equipment. However, because of the limited funds which have been allotted for experimental purposes, the Army depends to a large extent on the patriotic interest of private industry to keep it abreast of or ahead of current technical progress. The textile finishing industry can render a real service to the Army by furnishing its research staff with samples of military fabrics which have been given improved finishes, together with factual data on the properties and advantages of fabrics so treated. Army officers emphasize that such information to be useful must be facts and not ballyhoo. The Navy, likewise, is constantly on the lookout for improved textile materials, and will welcome any constructive suggestions from the industry.

Study of the accompanying chart will immediately suggest certain types of finishes which might be advantageous. Further investigation and consultation with procurement officers will reveal what particular ones are most desirable. In general, a finish must be durable— withstanding repeated washings, exposure to sun and rain, or other conditions of use—to make it suitable for military needs. Water-repellents and waterproofing materials, gas-proofing compounds, flameproofing agents, mildew preventives, synthetic resins which increase resistance to abrasion, mothproofing compounds, preshrinking agents and various types of permanent finishes are among the chemicals which offer possibilities. If any dyes are now available or are made available which will give better results from the standpoint of fastness or uniformity of shade than those now specified, the Army and Navy are ready to adopt them. Coatings and impregnating compounds are employed in treating various types of fabrics for use in military hospitals and by the Chemical Warfare Service.

The first step in developing improved finishes is, of course, to obtain from procurement officers of the various services specifications and samples of fabrics now employed, together with information on the uses to which each is put. With these data available, the textile technologist might in many instances be able to suggest chemical treatments which might render the fabric more serviceable. Sample fabrics so treated, with details as to the treatment and the results obtained, should be submitted to the Government for consideration and tests.

CIVILIAN FABRICS

The need for conserving certain fibers for use in military fabrics becomes increasingly apparent as the defense program gets into swing and as imports of natural fibers are being reduced or stopped. Likewise, there is a growing realization on the part of textile manufacturers that for civilian use they will have to develop new types of fabrics. It is believed that in many of these fabrics—such as carpets, upholstery, men's and women's suitings, and blankets—it will be necessary to use rayon staple or other synthetics to eke out the supply of wool. Again, substitutes must be found immediately for handkerchiefs, towels, dish towels, table cloths, napkins, draperies, sewing thread, fish lines, and other textiles formerly made from flax.

Further, if imports of silk are stopped, knitters and weavers will be compelled to make greater use than at present of Nylon, Vinyon, rayon, and cotton.

In the development of these new fabrics, the chemical treatments will, in many instances, be even more important than the construction of the cloth in insuring consumer satisfaction. Every operation involving treatment with chemicals will need to be re-examined—conditioning, lubrication of fibers, tinting, soaking, sizing, boiling-off, scouring, kier boiling, bleaching, dyeing, printing, and finishing. Having worked out the most satisfactory procedures up to the final wet-finishing operations, the finisher will then have his skill tested to the utmost. Fortunately, he now has at his command such chemicals as cation-active softeners, anti-slip compounds, preshrinking and other stabilizing agents, anti-creasing compounds, water repellents and spot-proofing agents, and many more materials which make it possible to produce practically any appearance, handle, or other characteristic desired. As a result it is probable that many of the new fabrics will actually be better than those now on the market and at the same time will cost less to produce.

At present there are manufactured in this country nearly 600 individual synthetic dyes and some 2,000 different chemicals used in textile processing. The accompanying chart lists approximately 50 of the more important types of compounds, and affords one a method of making a quick check to determine whether or not he is utilizing the newest developments in dyes and chemicals to the fullest extent in view of their fourfold importance in the defense program. Further investigation of this matter will be facilitated by reference to lists of individual dyes and chemicals and names of manufacturers, such as appear in the Buyers' Guide Section of the "Textile World Yearbook & Catalog," the "Yearbook of the American Association of Textile Chemists & Colorists," and the "Textile Chemical Specialty Guide."

The textile industry owes it to itself and to the nation to produce the best possible products for both military and civilian purposes. In so far as this involves chemical treatments, the textile mills undoubtedly can count on receiving upon request the utmost cooperation from the research and technical staffs of manufacturers of dyes and chemicals.

Is your mill utilizing these newest dye and chemical developments?

Aftertreating agents	○	Fiber and yarn lubricants	○
Anti-creasing compounds	○	Finishing compounds—cation-active	○
Anti-foaming agents	○	Finishing oils—non oxidizing	○
Anti-oxidants	○	Flameproofing agents	○
Anti-slip compounds	○	Fulling agents	○
Antiseptics	○	Kier boiling compounds	○
Assistants—dyeing, carbonizing, mercerizing	○	Latex	○
Bleaching agents	○	Lacquers	○
Boil-off agents	○	Leveling agents	○
Conditioning agents	○	Mildew preventives	○
Delustrants	○	Mothproofing agents	○
Desizing agents	○	Preshrinking agents	○
Detergents	○	Printing gums or thickeners	○
Dyes—Acetate	○	Scouring agents	○
Dyes—Acid with metal component	○	Sizing compounds	○
Dyes—Direct, fast-to-light	○	Soaking agents	○
Dyes—Direct, formaldehyde aftertreated	○	Soaps	○
Dyes—Insoluble azo	○	Solvents	○
Dyes—Leuco-vat	○	Spotproofing agents	○
Dyes—Mineral	○	Starches and gums	○
Dyes—Naphthol	○	Synthetic resins	○
Dyes—Resin dispersed	○	Throwsters tints	○
Dyes—Sulphur, water soluble	○	Twist setting agents	○
Dyes—Vat	○	Water conditioning compounds	○
Dyes—Viscose rayon	○	Water repellents	○
Emulsifying agents	○	Wetting agents	○

Are you utilizing supplies and equipment made of the LATEST TYPE MATERIALS?

TWO CARDINAL RULES in production of fabrics for national defense are: make them good, and make them fast. The government demands high standards of quality in the fabrics it buys, and the urgent need for textile products necessitates all possible speed in manufacture. To attain this dual goal of perfection and production, textile mills must avail themselve of every new development which aids these ends. The need for modern productive equipment is described elsewhere in this issue, but it is also important that supplies and equipment be given close scrutiny.

New and improved materials offer many advantages not heretofore obtainable. Corrosion-resistant metals in solid and clad form are deserving of increasing study as national defense demands are stepped up. They protect materials in process from possible staining or marking, and thus help to keep to a minimum damaged goods and goods which require reprocessing. They make it possible more quickly to shift from one dye formula to another. They inhibit corrosion, and thus curtail shutdowns for repair or replacement of rusted parts. Many types are available. Choices should be carefully made.

Hardened metals similarly reduce frequence of shutdowns for replacements and repairs. Investigation should be made of their advantages.

Lightweight metals, such as aluminum and magnesium alloys, also play a part, by easing materials handling problems, cutting machine loads, etc.

Applications of copper, brass and bronze in pipes and fittings, tubes, linings, and printing rolls should be looked into.

Ceramics for thread guides and certain wet processing equipment offer advantages which should be investigated. Plastics in a wide variety of types and for numerous purposes have rapidly increased in use in recent years.

Impregnated paper, fiber, and wood products have also been made available for many purposes; their characteristics and points of superiority should be closely scrutinized. Bobbins, spools, cones, picker sticks, trucks, boxes, and cans are some of the items currently being fabricated of these materials.

Synthetic rubber and rubber-like products also deserve careful attention, as do various cork-and-synthetic rubber compounds. Rolls, belting, hose, roll covers, cone covers, loom accessories, etc., make use of these materials. Improved natural rubber products, such as for hose, belting, rolls, and pickers, also should be given consideration.

Specially treated leathers for use in rolls, straps, pickers, belting, etc., are available and should be studied; as also should improved wooden products, such as tanks, towers, rolls, bobbins, picker sticks, trucks, boxes, and numerous other items.

Has your mill investigated modern supplies and equipment made from these latest-type materials?

Corrosion-resistant metals in such items as bobbins, spools, and cones ◯ conditioning machines ◯ hosiery drying forms ◯ tanks ◯ pipes and fittings ◯ wet-processing equipment ◯

Hardened metals in card and napper clothing ◯ rings and travelers ◯ heddles and reeds ◯ knitting machine parts ◯

Lightweight metals in such items as bobbins and spools ◯ warp beams ◯ hosiery drying forms ◯

Copper, brass and bronze in such items as pipes and fittings ◯ tubes ◯ printing rollers ◯ linings ◯

Ceramics in thread guides ◯ wet-processing equipment ◯

Plastics in such items as bobbins, spools, and cones ◯ hosiery inspection forms ◯ wet-processing equipment ◯

Impregnated paper, fiber, or wood in such items as bobbins, spools, cones ◯ picker sticks ◯ trucks ◯ boxes ◯ cans ◯

Synthetic rubber in such items as rolls ◯ belting ◯ hose ◯

Cork-and-synthetic rubber in such items as roll covers ◯ cone covers ◯ loom accessories ◯

Specially treated leather in rolls ◯ straps ◯ pickers ◯ belts ◯

Improved wooden products such as tanks ◯ rolls ◯ bobbins ◯

Improved rubber products as hose ◯ belts ◯ rolls ◯ pickers ◯

Are you geared up to increased demands on your MAINTENANCE DEPARTMENT?

By C. C. HARRINGTON

THE PRESENT industrial activity that has been stimulated by the national defense program is being felt by practically all textile mills, whether or not the mill is actually working on defense orders. For the mill maintenance departments, the problem is not only intensified by the increase, or anticipated increase, in the mill's own production, but also by the greater activities of other industries. Textile machinery manufacturers are feeling the push, and the delivery of repair parts may be slowed up as the manufacturers strive to keep up with the demand. Machine tool plants have long been working at capacity, and the ill-equipped textile machine shop may even now have difficulty in modernizing. Heavy goods industries, ship yards, and armament plants are offering every inducement to skilled mechanics, with the result that many a textile mill is losing valuable maintenance men to these industries. All this flashes a warning to the textile maintenance engineer. It is now high time to get his organization in order and to prepare for the future.

In the mill itself the maintenance engineer finds it necessary to make a thorough survey of his plant facilities, and to modify his methods and organization according to the new business outlook. Increased production means either putting additional existing or new machines into operation, or increasing the number of shifts. Right from the start, therefore, the average maintenance engineer is confronted with additional demands for maintenance service. This may call for increasing the maintenance force and rearranging scheduled operations, such as lubricating machinery, servicing belting, and cleaning equipment.

PERSONNEL PROBLEMS

If an expansion in the maintenance personnel is required, the engineer will do well to look among his own company's employees before competing in the open market with the offers of armament industries for skilled labor. In fact, some concerns are even losing skilled mechanics of their own to ship yards and kindred industries. In most cases, however, the key men of a textile maintenance organization are likely to remain with the company, desiring the steady work with which they are familiar, rather than the uncertainty of an ephemeral armament job that may pay somewhat more.

Around these key men, thoroughly acquainted with the plant's equipment, the maintenance engineer can expand his force to handle most any contingency. Helpers or assistants can quickly pick up the routine servicing duties, especially if the men are picked from the mill. Men with some mechanical experience or aptitude can usually be found in some other department of any mill, and these men make excellent material for training in maintenance.

With more shifts going into production, it is necessary to arrange the work of the maintenance force so that some key men will be available for each shift. An electrician on each shift is almost axiomatic. Motors and controllers require continuous care, and only a man familiar with the electrical system can be depended upon quickly to remedy a fault that may shut down an entire group of machines. In large plants, one or more helpers should aid the shift electrician by shouldering the routine inspection work, replacing lamp bulbs, and being available in an emergency to help replace motors or trace circuit faults.

A good machinist is almost as necessary for each shift as is the electrician. Although the operators or foremen can often make minor machine adjustments, a skilled mechanic is indispensable for repair work or replacing broken machine parts. The belting and overhead shafting which are almost universal in textile mills demand the constant care of a skilled man. During his spare time the shift mechanic can be used in the machine shop.

On the main day shift, the personnel of the machine shop plays an important part, especially during the present emergency defense period. Here is where skilled men are particularly necessary. With increased machine production, more repairs are needed. Machines which no longer are idle cannot be temporarily robbed of vital parts. And even the best equipped mill cannot hope to stock spare parts for everything under its roof.

At present there is no difficulty in obtaining parts from the textile machinery manufacturers. However, a few machinery builders have already received government orders; and, with the machine tool industry taxed to its limit, there is a possibility that manufacturers of textile equipment will be called upon to produce materials more urgently needed for the defense than are some textile machine parts. In that eventuality, the ingenuity and skill of good mill mechanics will be called into play in repairing and improvising necessary parts. For example, a skilled welder can repair parts that a few years ago would have had to be junked; and good machinists can machine rough castings into various machine parts.

MACHINE SHOP

In larger mills the machine shop generally includes modern shapers, millers, drill presses, grinders, and lathes. Supplementing these are complete welding outfits and equipment for straightening lineshafts. Some mills even go so far as to include gear shapers for the types of gears most widely used on their machines. Other mills have a stock of patterns for everything up to loom frames, so that in an emergency they can get their own castings from a local concern. With the present defense program soon to be in full swing, such assets of a maintenance department may be of more value than usual. As it will be difficult for the next year or more to obtain new machine tools, the machine shop equipment itself must receive careful maintenance.

Properly equipped and well-stocked pipe and carpenter shops may also mitigate many a future problem. Modern pipe-threading and cutting machinery is a must in the pipe shops of dyehouses, wool-scouring plants, and similar concerns where piping plays an important role. In any plant, to expedite pipe repairs, sharp and modern hand tools are as necessary as skilled men to use them.

Band saws, wood planers, and sim-

ilar wood-working machinery are the answer to satisfactory and fast carpentry work. Hatchets and saws are necessary, but the quick fabrication of wood products demands machinery. Some mills go in for their own pattern making, which guarantees them castings for almost anything they are likely to need and cannot get ready-made. A backlog of patterns for such parts is a handy thing to have at the present time.

Few mills are equipped to rewind burned-out motors, but they are able to handle practically any other electrical repairs. A properly set up test board pays for itself by speeding up the location of electrical equipment faults.

Anticipating an increased load on their electrical equipment, many maintenance engineers have wisely made an exhaustive check on all their electrical facilities. All circuits, motors, and transformers have been tested with a megger, to insure that the dielectric strength of the insulation is up to par. In some cases this has meant pulling in new wire, where the old wire showed a dielectric weakness. Motors on long-idle machinery have been baked to dry out the insulation of the windings and to insure against breakdown during future operation. The clearances between rotor and stator have been checked with filler gages to make sure that the motor bearings are not unduly worn.

Samples of oil from transformers and oil circuit breakers can be sent out for a dielectric test. If the test is low, the oil is filtered until up to par. It is not wise to wait until an increase in electrical load puts the final test on this crucial equipment. Where new looms or other machines are added to a section of the plant, the carrying capacity of the wires feeding this section requires careful checking. It is far safer to run another feeder, or increase the size of the existing feeder circuit than it is to wait until the overloaded wires cause a disastrous short circuit.

Increased use of productive equipment naturally means changing the lubrication schedule. Motors and machines are generally lubricated on a time basis—every week, two weeks, or month. These schedules will have to be changed to conform to the new operation. A lubrication man may be required for every shift, in order to maintain the proper schedule. Use of motors with ball bearings and ball-bearing shaft hangers goes far in alleviating the lubrication problem. On ball-bearing hangers, many mills have adopted grease fixtures that indicate when the proper amount of grease has been applied. This not only tends to economize on grease, but likewise helps eliminate the hazard caused by excess grease dripping on the product.

The stock room plays an important part in keeping a mill operating with a minimum of shut-down time due to equipment failure. A supply of bobbins, spools, shuttles, etc., is no more important than are spare machine parts. The stock of parts to be maintained can be determined from a record kept of machine repairs. These records prove their value at a time like the present, when it may not be possible to get quick deliveries of parts not on hand. The repair record, however, should permit the maintenance engineer to draw up a list of strategic parts which should be stocked at all times. This will insure a prompt repair of the majority of equipment failures.

SPARE PARTS

Many mills, particularly in view of the present defense program, have found it expedient to carry a spare motor of every horsepower capacity and speed used in the plant. A motor with a burned-out winding or bearing requires some time to be repaired. A spare motor can be connected up in short order. The same holds true for starting boxes and controller parts. A spare starter can be quickly substituted for a broken one, and the latter can be repaired during spare time on the electrical bench.

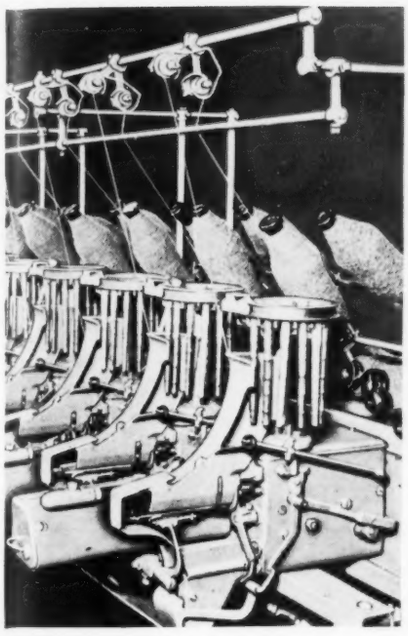
Materials for repairing the building and its equipment should also be listed as musts. Increased production puts a greater wear and strain on building facilities. Lumber, paint, cement, valves, pumps, and similar materials can all be delivered more quickly from a stock room than from some outside jobber.

The possibility of the need for additional productive equipment calls for a well-organized installation crew and proper equipment. The correct and rapid setting up of machinery calls for modern leveling and lining devices, as well as the necessary dollies, rollers, etc. To check the correct functioning of the machine after it is installed, speed indicators and vibration meters are indispensable in a modern plant.

Is your mill benefiting from these modern aids for the maintenance department?

- **Adequate repair record system** ○
- **Definite schedule of inspection and repairs** ○
- **Efficiently operated stock room** ○
- **Lubricant dispensing system** ○
- **Up-to-date wood working equipment** ○
- **Latest type metal-working equipment** ○
- **Improved hand tools** ○
- **Complete pipe-fitting equipment** ○
- **Properly organized paint shop** ○
- **Essential electrical testing and repair facilities** ○
- **Welding equipment** ○
- **Speed indicators, vibration meters, stroboscopes** ○
- **Lining and leveling devices** ○

TEXTILE EQUIPMENT NEWS



Section of automatic filling-bobbin winder (Whitin-Schweiter)

Automatic Filling-Bobbin Winder

Arrangements have been completed for manufacture in this country of the Whitin-Schweiter automatic filling-bobbin winder, it is announced by Whitin Machine Works, Whitinsville, Mass. Yarn to be wound can be handled on packages of various types, including roving, spinning, and twister bobbins; cones, tubes, and dyehouse packages. The machine is designed to handle cotton, woolen, worsted, linen, rayon, silk, and other textile yarns.

Reductions in winding costs said to be made possible by the new machine result from elimination of a considerable part of the winder tender's work, thus making possible an increase in number of spindles tended without increase in operative effort; large increase in winder speeds; arrangement of the drives so that a broken end stops only a single spindle; and construction which makes it possible to remove any desired individual unit for repair and to replace it with a spare unit, while the machine is still running.

The machine is equipped with a magazine feed, which makes it possible to creel without interrupting production. Another magazine contains empty bobbins, which are automatically fed into the machine for winding, as needed. Full bobbins are automatically ejected from the machine and delivered to a box, truck, or belt conveyor.

Other features of the machine cited are that diameter of fully wound bobbins can be adjusted to within 1/100 in.; that all bobbins are of the same diameter, regardless of variation in yarn number or tension; that all bobbins are absolutely cylindrical and without taper; and that both size of bunch and length of traverse can be adjusted easily.

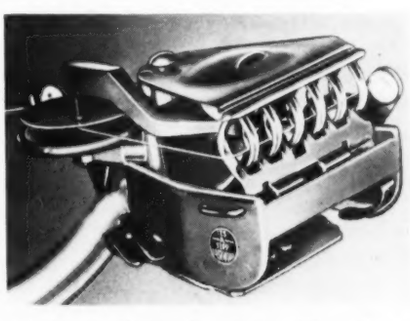
The winder, which is single-sided, can be supplied with any reasonable number of units, depending on floor space available and other factors. Existing machines, it is stated, can be easily pieced out to longer length if this becomes desirable.

Rawhide Loom Picker

Rawhide loom pickers said to embody several advances in design and construction have recently been introduced by Danielson Mfg. Co., Danielson, Conn. Additional metal in the barrel and a truss-like construction are said to eliminate failure next to the spindle. Square, built-up shoulders provide proper channels for the picker guides on both sides; prevent pinching, dragging, and cutting; afford adequate bearing surface for picker guides; and assure proper alignment at all times, the manufacturers state. A newly designed impact head provides a larger shuttle target, which is said to permit use of blunter-nose shuttles, compensate for slight variations in centering of shuttles, and give longer life because of more material.

High-Speed Creel Tension

Sipp-Eastwood Corp., Paterson, N. J., recently introduced a new gate-type, high-speed creel tension designed for use on fine-denier, low-twist yarns, but said to be perfectly capable of handling all other types of yarns as well. The gates are made of hardened steel, chromium plated, and the tensioning surfaces are finished to a particular grain satin which, it is stated, has equal reaction to all types of yarns.



High-speed creel tension (Sipp-Eastwood)

Furnisher Brushes With Nylon Bristles

Development of Nylon bristles for furnisher brushes for printing machines has been announced recently by the Plastics Department, E. I. du Pont de Nemours & Co., Inc., Arlington, N. J. Brushes with these bristles are now being manufactured by Hardy Brush Co.,

Furnisher brush (Du Pont Plastics)

Andover, Mass.; R. B. Heffernan Brush Co., North Adams, Mass.; and M. W. Jenkins Sons, Inc., Cedar Grove, N. J. The long life of these brushes is indicated by the fact that an experimental brush, in operation in a large print works for over a year, has yet to be rebristled. Another advantage cited is that use of Nylon bristles makes it possible to wash the brush and thus to employ it with dyes of different colors. It is interesting to note that the furnisher brush shown in the accompanying illustration won a top award in the competition for new plastics sponsored by the magazine *Modern Plastics*.

Thread Ratio Control for Hosiery Seamers

Union Special Machine Co., 432 Franklin St., Chicago, has announced a thread ratio control for its line of

Thread-ratio control (Union Special)

hosiery seaming machines. The device is said to make possible absolute control of the ratio of one thread to another in seaming hosiery, to measure the thread mechanically, and to insure proper tension. Two or three threads, depending upon the stitch type to be produced, are passed first through the master tension, and then around individual rollers. The rollers are of predetermined circumference to give constant proper ratio between needle and looper thread consumption.

Among features of the thread ratio control stressed is the fact that weather conditions will not affect the stitch structure produced. Attaching the control to seamers already in use is said to be simply and quickly accomplished, and it is stated operators can learn the handling of the control in a few minutes.

Crepe Tension

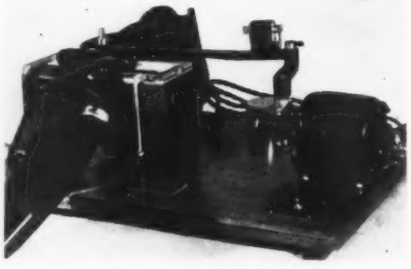
For use in connection with overend delivery from large packages on its No. 90 winders, Universal Winding Co., Providence, R. I., has designed a new crepe tension. Advantages of overend delivery from packages up to 2 lb. which cannot be successfully unrolled are said to include less changing of spools; easier starting at high speeds, with less end breakage; a steadier, more uniform tension; and freedom from strained yarn.

Crepe tension for overend delivery (Universal)

The tension incorporates two disks pressed together and forming a V slot in which the yarn is threaded and allowed to find its own diameter. A band attached to a compensator arm acts as a brake on the disks to control the amount of tension. The yarn, threaded around the disks, causes them to turn; there is, it is stated, no opportunity to chafe the yarn or distort the twist, yet no kink can go through.

Abrasion Tester

For testing resistance to abrasion of textile fabrics, a new machine has been introduced by Saxl Instrument Co., Providence, R. I. It is pointed out that the device is adjustable over a large range of speeds and operating conditions. A suction arrangement with which the tester is equipped is said to remove dust as the material is being tested, making certain that grit produced during the wear test will have no abrading effect on the sample.



Abrasion tester (Saxl)

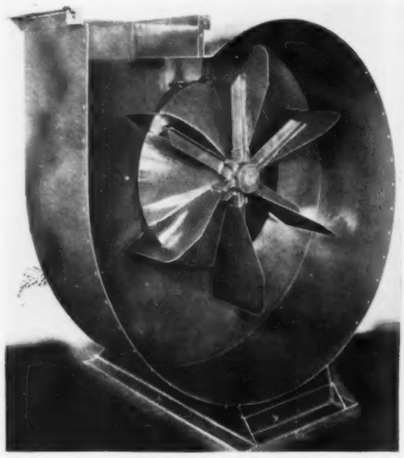
Normally, the machine uses No. 6 Army duck as the abrasive material, $3\frac{1}{2}$ lb. of weight on the abrader, 6 lb. load on the cloth, and makes 96 double rubs per min. These items can, however, be changed to suit conditions.

Bunch-Saving Attachment

An attachment for woolen mules, designed to make a short tapered wind on bobbins, which in turn is said to reduce yarn breakage at the loom and decrease waste, is being introduced by Robert A. Gard, Charlton City, Mass.

The attachment has a pivoted lever, which is fastened to the floor adjacent the back of the builder rail. This is connected to a lever on the front of the mule by a rod. Adjustments permit raising the rail the amount needed to get the length of bunch desired. It is said the device does not interfere with adjustment of the builder shoes.

Other advantages cited are that the device reduces strain on yarn during spinning, while the bunch is being wound, and that it makes possible uniform bunches on every mule. It is said to be especially applicable when coarse yarns are being spun, or when it is desired to change often from light to heavy yarns, or vice versa.



Wool blower (Allen)

Wool Blower

A new steel-plate wool blower announced by E. H. Allen Co., 22 Dorance St., Boston, is said to embody many improvements and is designed to permit installation in existing stock conveying systems without changes in pipes or switches. The fan is of all-welded construction with no bolts, rivet heads, or other obstructions inside the casing; the oversize shaft is made of turned, ground, and polished steel, and is fitted with self-aligning bearings.

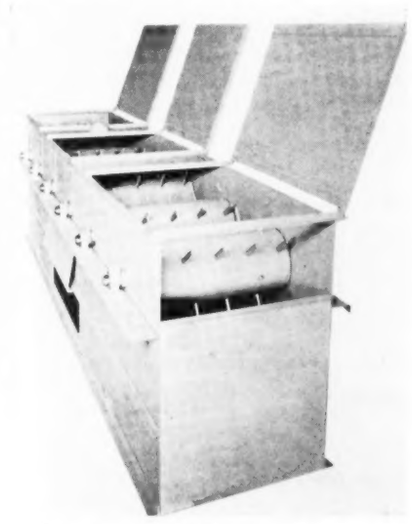
Cotton Opener and Cleaner

As an addition to its line, Centrif-Air Machine Co., Atlanta, Ga., has announced the Superior cleaner, a new machine employing mechanical and centrifugal forces to open cotton and remove foreign matter. The working mechanism consists of six horizontally mounted beaters in tandem, each of which works over a screen. It is said that cotton is carried through by the action of the beaters, and that there are no air currents to interfere with the centrifugal effect of the beaters or to carry light leaf through with the cotton. A slowing down of the cotton as it moves forward from beater to beater is said to promote the opening and cleaning action of the individual beaters.

Full-width washing machine (Mawaco)

The machine is designed to allow iron and other hard materials to leave the cleaner proper below the cotton and at greater velocity.

Constructed of steel throughout, the complete unit occupies floor space 3x12 ft. and is driven by a 3 hp. motor when handling up to 1500 lb. per hour. Beater blades are oval to insure better opening and to eliminate eddy currents. Beater cylinders are driven by chain and sprocket; ball bearings are left open for convenient lubrication; clean-out doors are wide enough for quick, complete cleaning.



Opening and cleaning machine (Centrif-Air)

Special cleaning control doors are available for use under screens and grids when the machine is used on staple fiber or mixtures.

Full-Width Washing Machine

To satisfy the call of a number of woolen mills, Mawaco Machine Co., 56 Bogart St., Brooklyn, has developed a full-width washing machine. Advantages of the machine in washing fabrics open-width instead of in rope form are said to be elimination of bagging and wrinkles, and more thorough washing which results in more even dyeing.

Useful Accessories for Textile Mills

Pillow Blocks. Fafnir Bearing Co., New Britain, Conn., has announced a new series of pillow blocks, flange cartridges, and cylindrical cartridges incorporating Mechani-Seal ball bearings and wide inner rings with self-locking collars. The bearing construction is said to give efficient operation, and the inner ring design to make for ease of application.

Air Hoist. Ingersoll-Rand Co., Phillipsburg, N. J., has introduced the Air-Bloc, a flexible, welded, link-chain air hoist designed for lifting loads up to 700 lb. The hoist itself weighs less than 75 lb., and is said to be easily movable.

Centrifugal Pump. Allis-Chalmers Mfg. Co., Milwaukee, Wis., has recently announced a new Electrifugal pump which is a complete centrifugal pump and motor unit on one shaft and one housing. The special motor design is available in splash-proof, totally inclosed, fan cooled and explosion-proof types; and in a variety of horsepowers and speeds. For normal service a cast iron casing, bronze fitted, is supplied; other metals or combinations can be supplied where needed.

Fluorescent Lighting Accessory. Benjamin Electric Mfg. Co., Des Plaines, Ill., has made available a lamp-shielding louver for its Stream-Liter fluorescent fixtures. The additional shielding made possible by these louvers is said to give greater eye comfort and freedom from glare. Use of louvers is said to be particularly effective in installations comprising long parallel rows of units mounted end to end.

Floor Varnish. E. I. du Pont de Nemours & Co., Wilmington, Del., has announced a Super-Clear varnish designed to give a durable, overnight drying, high-gloss finish for floors, interior trim, and woodwork. Excellent resistance to both hot and cold water is a feature cited.

Wrench Set. Snap-on Tools Corp., Kenosha, Wis., is introducing a midget combination wrench set said to give added convenience in handling tiny nuts and bolts. Each wrench has an open end and a box-socket end; sizes available include $\frac{1}{4}$, $\frac{9}{32}$, $\frac{5}{16}$, and $\frac{11}{32}$ in.

Pressure Indicator. Republic Flow Meters Co., 2240 Diversey Pkwy., Chicago, has placed on the market a new multi-point indicator for drafts, pressures, differentials, and other factors in boiler and industrial furnace operation. The gages have 12-in. vertical, translucent, rear-illuminated scales; they are built for either flush or projected mounting.

Magnetic Starters. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has announced a new line of across-the-line magnetic starters for use with multi-speed squirrel cage motors of from 200 to 600 volts, 1 to 100 hp. Starters are available for constant horsepower, constant torque, variable torque, single winding, and double winding motors in two, three, or four speed types.

Laboratory Mixer. Mixing Equipment Co., Rochester, N. Y., has announced an adjustable-speed laboratory

mixer said to be portable and easy to handle. It is designed to provide constant horsepower and increasing torque with slow speeds. Speeds range from 1,750 r.p.m. almost to 0.

Steel Alloy. Joseph T. Ryerson & Son, Inc., 2558 W. 16 Street, Chicago, announces a carburizing nickel-molybdenum steel for heavy-duty gear and shafting applications. In sections of 1 in., it is maintained that tensile values of 200,000 lb. per sq. in. and yield-strengths in the neighborhood of 165,000 lb. per sq. in. may be developed, together with hardnesses of 415 Brinell.

Hand Lift Truck. Yale & Towne Mfg. Co., 4530 Tacony St., Philadelphia, is manufacturing a new hand lift truck. Made in capacities from 3,500 to 5,000 lb., the truck has pump action lift and features effortless pump-handle operation. The handle, designed for safety, has lower flush-welded grip with no projecting edges.

Pulley Coating. Powerlox Mfg. Co., 501 W. 145 St., New York, has introduced Powerlox, a pulley coating for use in preventing belt slippage. The material is said to cover the pulley with a rough, frictional surface which insures a grip between pulley and belt.

Concrete Floor Surfacing. Wilbur & Williams Co., Park Square Bldg., Boston, have announced Dye-crete, a penetrating coating said to form a firm, hard, permanent coating over concrete and to be resistant to wear as well as to attacks by alcohol, grease, water, and dilute chemicals.

New Dyes and Chemicals

Concentrated Detergent

A new concentrated detergent, Modinal D, is announced by the Gardinol Corp., Wilmington, Del. The strength of the product is greater than that of Modinal ES, which will permit economies and is expected will broaden its use. The new detergent, which is said to be almost equally efficient in hard and soft water, is a wetting and penetrating agent, dyeing assistant, and general all-round surface-active agent for use with all fibers. Sale agents for the detergent are Procter & Gamble, Cincinnati, Ohio; and E. I. du Pont de Nemours & Co., Wilmington, Del.

Thiourea

Dependence on foreign sources for thiourea has been eliminated by its manufacture on a large scale by American Cyanamid Co., 30 Rockefeller Plaza, New York. Thiourea is employed in the textile industry for treatment of various natural and synthetic fibers. For example, acetate rayons can be softened for dyeing by immersion in a solution containing thiourea.

Paraffin Wax Emulsifier

A new type of paraffin wax emulsifier, trade-named NOPCO 2251-B, has been announced recently by National Oil Products Co., Harrison, N. J. The new product is a heavy, tan-colored paste which, when mixed with paraffin wax, makes the wax water-dispersible or emulsifiable. It is stated that NOPCO 2251-B produces a stabilized emulsion spontaneously, without application of rapid agitation or shearing effect. For that reason, no special equipment is necessary in utilizing it.

Yarn Conditioning Agent

Development of a new conditioning fluid for treating cotton yarn has been announced by Burkart-Schier Chemical Co., Chattanooga, Tenn. The compound, known as Tenesol, is used in diluted solution in water. Its rapid wetting action is said to afford a complete moisture regain in a minimum time. Due to the hygroscopic nature of this product, there is said also to be excellent retention of the regain. The new conditioning agent is designed for use in all types of conditioning and twist-setting machines. Advantages cited include: yarns conditioned with this fluid show an even penetration and absorption of moisture, with no surface globules or droplets of water; because the twist is permanently set, weaving is greatly facilitated; no harmful action upon the fiber; and no interference with subsequent dyeing and finishing operations.

Mildew Preventive

Announcement of a new method for treating textiles to render them resistant to mildew and mold has been made by Ciba Co., Inc., Greenwich & Morton Sts., New York. The new process, known as the Napenize treatment, is the result of cooperative research of Ciba Co. and Dow Chemical Co. The process is recommended chiefly for use on cotton fabrics which are to be subjected to outdoor exposure. The method is comparatively simple and can be carried out on usual types of finishing equipment, such as an ordinary mangle fitted with squeeze rolls. The fabric is first impregnated at open width with a solution of sodium pentachlorphenate (Dowicide G), passed through a nip to remove the excess liquor, run through a solution of lead acetate which has been made slightly alkaline with caustic soda, again squeezed, and dried without washing. This treatment results in the formation on the fabric of insoluble lead pentachlorphenate. Laboratory and field tests are said to indicate that cloth so treated does not support mildew or mold growth.

General Dyes

General Dyestuff Corp. announces the following new products: Artificial Silk Black RRA, a direct dye suitable for dyeing cotton and rayon and producing full, non-bronzing blacks; after-treatment with formaldehyde or formaldehyde and bichromate improves the fastness to water, washing, and perspiration.

Rapidogen Golden Yellow 3R, a Rapidogen color producing bright, golden-yellow shades with a reddish cast; it possesses excellent fastness to washing, fairly good fastness to chlorine, and moderate fastness to light.

Calco Color

Calco Chemical Division, American Cyanamid Co. announces the following new product: Calconese Brilliant Orange GF Conc., an acetate dye yielding shades of excellent fastness to light and good fastness to washing; cotton and viscose rayon are left white; it is especially suitable for jig dyeing because of its build-up and low-temperature dyeing properties.

Flame Retardent

Development of a flame retardent process has been announced recently by Neva-Wet Corp. of America, 500 Fifth Ave., New York. This process, known as the Neva-Flame process, can be applied to cotton and rayon fabrics or garments. It is stated that the treatment does not affect the handle of the fabric.

Silk Soaking Compound

Development of a new type of silk soaking compound is announced by Quaker Chemical Products Corp., Con-

Now

Washable

TECA BLENDS

REG. U. S. PAT. OFF

the first laundry-approved spun rayon fabrics

AMERICAN INSTITUTE OF LAUNDERING
LAUNDRY TESTED
and
APPROVED by

Approved as washable by the American Institute of Laundering

All men's and women's garments of the new washable TECA BLENDS, which are made to approved specifications, will be entitled to the official label, guaranteeing acceptance of the garments for laundering by any of the 2,200 leading commercial laundries comprising the Institute membership.

For more information about launderable TECA BLENDS, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York, sales representatives for Tennessee Eastman Corporation, subsidiary of Eastman Kodak Company.

Eastman

CRIMPED ACETATE RAYON

shohocken, Pa. This compound, known as Diapene 1033, is not an oil, but is described as a newly developed organic chemical. Advantages cited are that it reduces soaking time to 30 min., regardless of type of equipment employed, and results in uniform soaking. Hosiery made from silk treated with the new compound is said to be improved in quality, as less boil-off is required.

Synthetic Resin Finishes

Announcement of a series of synthetic resin finishes for various textile uses has been made by Warwick Chemical Co., West Warwick, R. I. The first of these finishes to be made available is a precondensed urea-formaldehyde resin, called Formaset No. 8. This is a water-clear product which is said to possess remarkable stability in solution and to be a highly effective agent for permanent textile finishing. Other products in the series of Formaset finishes for crease-proofing, shrinkage-setting, pigment printing, and other applications are now in the final stages of development.

Impregnating Compound Renders Fabrics Electrically Conductive

An impregnating or saturating compound for fabrics to render them electrically conductive, has been developed by Acheson Colloids Corp., Port Huron, Mich. The coating hardens on exposure to light after application. Containing colloidal graphite, small amounts of a hardenable organic colloid, and a hardening agent, the coating can be applied at normal temperatures or at slightly elevated temperatures to promote rapid drying.

New Publications

Knitting Machine Operation

THE READING FULL-FASHIONED KNITTING MACHINE; F. K. Fogleman, Textile Machine Works, Reading, Pa.; $1.

This manual on the construction and operation of the full-fashioned knitting machine has been prepared as an aid to knitters, fixers, foremen, and manufacturers. Part I describes and illustrates the various parts and mechanisms of the Reading high-production full-fashioned knitting machine. Part II discusses the causes and prevention of sleaziness and bad selvages. Although the illustrations and details of construction apply only to the Reading machine, the treatise applies broadly to all full-fashioned knitting machines and the full-fashioned knitting process. A glossary of words and terms used in the full-fashioned hosiery industry is included in the hope that it will help to standardize the nomenclature used in the industry. The book is a valuable addition to the literature on knitting, containing information which will repay careful study by knitters, fixers, and overseers in every full-fashioned hosiery mill.

Textile Library in Brief

TEXTILE RECORDER YEAR BOOK, 1940; Harlequin Press, Manchester, England; 10s. 6.

Changes in the latest edition of this well-known reference book on textile manufacture consist mainly of revision at essential points in order to keep the information up-to-date.

Where to Buy Textile Chemicals

TEXTILE CHEMICAL SPECIALTY GUIDE, 1940 Edition, Rayon Publishing Corp., 303 Fifth Ave., New York; $2.50.

The new edition of this guide book contains an alphabetical list of 181 manufacturers of textile chemical specialties and their products, a classification of products according to 200 applications, and an alphabetical list of brand names of 2,600 chemical specialties.

You and the Boys at the Top

LITTLE BITS ABOUT BIG MEN, by B. C. Forbes; B. C. Forbes Publishing Co., New York; $2.50.

Depend upon it—this pleasant package of "philosophical nuggets" is just exactly what the title says it is and there is an index at the end in which you can locate any particular "big man" (and the pages devoted to him) that Mr. Forbes gives a "bit" about.

Have you ever wondered which other big shots—besides yourself—like to fish? Or which of them share your pet enthusiasms and your beliefs? If you have—and who isn't curious about the other fellow, particularly if he's successful and you want to be?—you're apt to get a boost for your ego from "Little Bits——". You'd like to know it, wouldn't you, if Charles M. Schwab once had exactly the same thing happen to him that occurred to you the other day on the golf course?

These "peopleisms" are about the big men—in business, financial and public circles—who have colored American life during the generation just passed. For the most part, they are light and illustrative and would make your fire burn brightly if used as fuel to encourage "the young man you'd like to see succeed" or to step up that after-dinner speech somebody talked you into making.

Industrial Chemicals

CHEMICALS OF COMMERCE; Foster D. Snell and Cornelia T. Snell; D. Van Nostrand Co., 250 Fourth Ave., New York; $5.

This book is intended to be a source of information on the composition of chemicals used in commerce. It is designed to be of chief value to purchasers and users of chemicals who have not had formal chemical training. Data are included on various grades of chemicals, uses, hazards in handling, etc.

Lighting Practices

ARTIFICIAL LIGHT AND ITS APPLICATION—Revised Edition; Westinghouse Lamp Div., Westinghouse Electric & Mfg. Co., 150 Bdwy., New York; $1.25.

This survey of latest lighting practice is presented in such a way as to be of interest both to lighting engineers and laymen. Chapters of particular interest to textile manufacturers include the following: Light Sources, Light and Vision, Color, Light Control and Lighting Equipment, and Industrial Lighting. Individual chapters can be obtained at 7¢ each.

Welding Instructions

PROCEDURE HANDBOOK OF ARC WELDING DESIGN AND PRACTICE—Sixth Edition; Lincoln Electric Co., Cleveland, Ohio; $1.50.

The new edition of this book has been revised to include data brought out in the last two years essential for efficient use of arc welding. The book contains 1,125 pages and 1,557 illustrations.

Fundamentals of Time Study

A PRIMER OF TIME STUDY; F. W. Shumard; McGraw-Hill Book Co., 330 West 42nd St., New York; $5.

Intended for those who are interested in time-measurement procedure as applied to industrial operations, but who have no knowledge of the subject, this

CONTROL POINTS

In the American system of mass production industry has developed methods to insure that products will be uniform.

Here at Sonoco, at vital intervals along the production line—points-of-control are maintained to guarantee absolute and rigid regulation of uniformity and quality in every product.

Raw materials are first subject to careful laboratory checks. At intervals, inspections for flaws and for dimensional accuracy are made. Finally, products are carefully tested under conditions similar to actual use.

This is the system of your dependable source of supply.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

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DEPENDABLE SOURCE OF SUPPLY

book first approaches the principles involved in an elementary manner and then discusses the more advanced principles involved. The book is designed particularly for home study.

Cotton Standards

STANDARDS FOR APPEARANCE OF COTTON YARN: Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C.

Report (10 pp.) of part of program of work on cotton quality and standardization research carried out by the Department of Commerce. Includes discussion of factors influencing yarn appearance, description of standards developed, and use of the standards.

Spinning Properties of Cotton

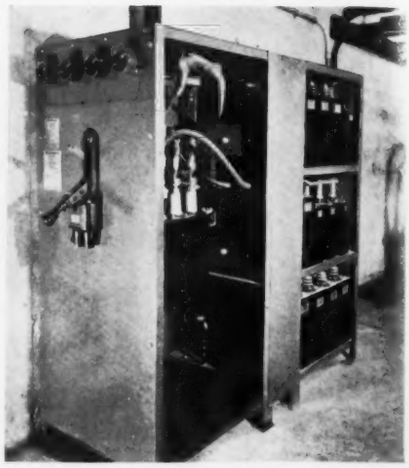
SPINNING AND FIBER PROPERTIES OF PIMA, SXP, and A Pima-SXP Backcross: Agricultural Marketing Service, U. S. Department of Commerce, Washington, D. C.

Report (15 pp.) of an investigation by the Department of Agriculture in cooperation with Clemson Agricultural College of the properties of seven samples of cotton to determine fiber properties, manufacturing waste, strength and appearance of yarn, and manufacturing performance.

Hosiery Standards

HOSIERY LENGTHS AND SIZES—3rd Edition; U. S. Government Printing Office, Washington, D. C.; 5c.

The third edition of the Commercial Standard for hosiery lengths and sizes supersedes the standard adopted in 1936 and describes the revised standard and methods of measurements effective from Aug. 15, 1940. It should prove a useful addition to the libraries of textile mills producing hosiery.



CAPACITORS SAVE 6% ON POWER BILL: Correction of plant power factor from 0.80 to 0.95 saves the Bigelow-Sanford Carpet Co., Amsterdam, N. Y., 6% on its monthly power bill by reducing demand charges. Expressed as a percentage of first cost of capacitors, the annual saving approximates 30%. The installation comprised 1560 kva of Westinghouse capacitors. Above is shown one of the 12 banks of capacitors at Bigelow-Sanford. Individual banks may be connected as required by load changes in the mill.

News of Suppliers

James M. Pike, manufacturers' agent, Atlanta, Ga., now represents Robert Reiner, Inc. and S. Bleckman, both of Weehawken, N. J., and C. S. Sargent & Sons, of Graniteville, Mass.

Willcox & Gibbs Sewing Machine Co. after about 80 years at 658 Broadway, New York, N. Y., moved their offices on Nov. 1 to 214 West 39th St., New York.

Warwick Chemical Co., West Warwick, R. I., has extensive additions and improvements under way at its Rock Hill, S. C., plant. Ernest Nathan is president of the company.

Reading Foundrymen's Association, Reading, Pa., has nominated H. P. Good, foundry superintendent of Textile Machine Works, as president. He will be elected on Nov. 19 to succeed E. J. Snell of Lebanon, Pa.

E. F. Houghton & Co., Philadelphia, has appointed W. A. Isenberg as textile lubrication and transmission engineer in its southern division. He will work out of the Charlotte office in conjunction with the company's sales representatives as technical consultant. He was formerly in the Textile Lubrication Department of the company's main office.

Universal Winding Co. is completing organization of the Cranston (R.I.) Arms Co., a subsidiary which will manufacture Johnson rotary semi-automatic rifles. Manufacturing rights are controlled by Johnson Automatics, Inc., headed by Capt. M. M. Johnson.

E. KENT SWIFT, who recently observed the 40th anniversary of his service with Whitin Machine Works, Whitinsville, Mass. He has been active head of the organization for the last 26 years. Mr. Swift was born in Eau Claire, Wis., was graduated from Williams College in 1900, and in that year started his employment at Whitin as a mechanic. He succeeded Marston Whitin as active head of the business in 1914.

National Starch Products, Inc., New York, N. Y., has appointed to its Textile Division, William L. Pierce, for the last 20 years connected with Bellman Brook Bleachery, Fairview, N. J., and Newburgh (N.Y.) Bleachery.

Albert W. Drobile, textile engineering consultant, Philadelphia, Pa., has suspended his professional practice to become associated with the reorganized Glenside Mills Corp., Skaneateles Falls, N. Y., as executive vice-president and general manager of manufacturing. He will be located at Skaneateles Falls.

Quaker Chemical Products Corp., Conshohocken, Pa., has appointed N. Judson Miller as technical sales representative to contact dyeing and finishing plants in North Carolina, South Carolina, Georgia and Alabama. Mr. Miller is to be added to the sales force already operating in that territory. His headquarters will be at Charlotte, N. C. Mr. Miller is already known to the trade he will cover, as he was formerly in the same area representing the synthetics department of Hercules Powder Co.

The 14th National Exposition of Power and Mechanical Engineering will be held from Dec. 2 to 7, 1940, at Grand Central Palace, New York. The management states that it will be the largest show of its kind since 1930.

National Oil Products Co., Harrison, N. J., has merged its Laundry Division with Division H of its Industrial Sales Department. In charge of the sales of this division will be Marvin S. Eavenson, who was recently a divisional sales manager with Colgate-Palmolive-Peet Co.

Institute of Public Relations, New York, has appointed John W. Darr as vice-president and managing director. He has been director of public relations for Commercial Investment Trust, Inc.

Keep In . . . Keep Out

More than 25 million New Departure Self-Sealed Bearings have been used, because they . . .

KEEP IN	KEEP OUT
lubricant	dirt
endurance	friction
accuracy	wear

Also . . . they simplify machine design and reduce costs

NEW DEPARTURE

SELF-SEALED BALL BEARINGS

NEW DEPARTURE - DIVISION OF GENERAL MOTORS - BRISTOL, CONNECTICUT - DETROIT - CHICAGO

J. R. SIMPSON, of Durham, N.C., who has been placed in charge of another chemical sales office established by the Columbia Alkali Corp., a division of the Pittsburgh Plate Glass Co., in the Southeast. After Feb. 1, 1941, the office will be located at Charlotte, N. C. W. I. Galliher is director of sales of Columbia Alkali.

Textile Machine Works, Reading, Pa., have retired E. Max Mueller as chief of its outside erecting force after 21 year's service. At a dinner in his honor he was given a gold watch by Henry Janssen, president, and Ferdinand Thun, secretary-treasurer.

Curtis Lighting, Inc., Chicago, has appointed M. C. Wilt as vice-president and general manager. Newly appointed also are G. T. Morrow, vice-president in charge of sales; H. J. Dillon, vice-president in charge of production; and L. N. West, secretary-treasurer. Kenneth Curtis continues as chairman of the board and Darwin Curtis, as president.

Elastic Stop Nut Corp., Union, N. J., reports the resignation of Harold B. Thomas, one of the founders of the company, as vice-president in charge of sales. He will enter consulting work in product analysis and market research, but will remain a director and member of the executive committee of the company.

Monsanto Chemical Co., St. Louis, has appointed E. A. O'Neal, Jr., manager of the Anniston plant of the Phosphate Division to be manager of the new plant under construction at Trenton, Mich. E. J. Swanson, chief clerk at Anniston, will become office manager at Trenton.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has awarded a 30-year service emblem to George H. Bucher, president of the company. He joined Westinghouse in 1909 as member of the graduate students training course, winding coils at 18c an hour. He became president in 1938. More than 21,000 other Westinghouse employees, with the company for 10 years or more, are receiving similar awards.

Henry K. Barnes Co., tanner and manufacturer of leather products, has removed its offices from Boston to Salem, Mass. Administrative and sales forces are now located in a recently completed building adjacent to the company's factory. W. M. Ray is president of the company.

Consolidated Products Co., New York, tendered a dinner to B. M. Todd on Oct. 10 in recognition of his retirement on pension after 21 years service with the company. Mr. Todd has been for many years superintendent of the company's Newark, N. J., warehouse. William Wolf succeeds him.

Raybestos-Manhattan, Inc., Passaic, N. J., reports that F. L. Curtis, treasurer of the company, has been elected a director of the Rubber Manufacturers Association.

TURBINES HELP MAKE RAYON: This quintet of G-E turbine-generators, housed in the Front Royal (Va.) powerhouse of the American Viscose Corp., supply 60-cycle current for ordinary purposes and control, and a constant high-frequency supply for the spinning machinery in this rayon plant. These units furnish steam for power purposes, for drying operations, and hot water for washing and bleaching.

SCHOLLER BROS. PICKED A WINNER: On page 197 of the September, 1940, issue of TEXTILE WORLD appeared the picture of a charming young girl on the deck of a boat, under the catchy caption "See-Worthy." It was in an advertisement of Scholler Bros., and the model was Miss Frances Burke who posed for this picture in July. A few weeks later, just before the advertisement was published, she won the national beauty contest at Atlantic City, thus becoming "Miss America" and confirming the judgment of Scholler's advertising executives on her pulchritude. She will appear again in Scholler's advertisement in the December issue. Up to her Atlantic City victory, Miss Burke is reported to have posed for only two other advertisements. The photograph above was made under the direction of the R. E. Lovekin Corp., Philadelphia, advertising agency for Scholler Bros.

Cutler-Hammer, Inc., Milwaukee, Wis., has moved its office and warehouse in Atlanta, Ga., to a new location at 134 Marietta St., N. W. This office is in charge of A. C. Gibson.

Pennsylvania Salt Mfg. Co., Philadelphia, has elected L. A. Smith as vice-president and treasurer. He has been secretary-treasurer since 1921. W. R. Over was elected secretary.

Northern Equipment Co., Erie, Pa., has appointed Neil H. Brown, Charlotte, N. C., as district representative for Copes feed-water regulators and allied equipment.

Packaging Institute, Inc., New York, on Oct. 10, elected the following officers: president, Carl H. Lambelet, New Jersey Machine Corp.; vice-presidents, George R. Webber, Standard Brands, Inc., and A. Vernon Shannon, Westfield River Paper Co.

National Industrial Advertisers Association, Chicago, Ill., has elected as its president Richard P. Dodds, advertising and sales promotion manager of

"... and we're making more money since we began knitting with TMW Needles."

ROBERT LEESON, president of Universal Winding Co., Providence, R. I., who has announced a plan whereby employees of that company in this country have offered a haven for the children of employees at the British branch of the company in Manchester, England, for the duration of the war. Company workers will take care of the children in homes corresponding to their own, and it is expected that sons of Universal's British employees will be given the opportunity to train in a plant similar to that in which their fathers work in Manchester.

Truscon Steel Co., Youngstown, Ohio. Vice-presidents elected were: E. J. Goes, Koehring Co., Milwaukee; Herbert V. Mercready, Magnus Chemical Co., Garwood, N. J.; Terry Mitchell, Frick Co., Waynesboro, Pa.; W. D. Murphy, Sloan Valve Co., Chicago; Louis J. Ott, Ohio Brass Co., Mansfield, Ohio; R. T. Reinhardt, California Corrugated Culvert Co., Berkeley, Calif. E. C. Howell, of the Carboloy Co., Detroit, was elected secretary-treasurer.

Sterling Pump Corp., Hamilton, Ohio, has acquired the Turbine Pump Division of the Roots-Connersville Blower Corp., Connersville, Ind. Henry J. McKenzie, executive vice-president, has been made president of the Sterling Pump Corp., succeeding Maurice Rothschild who will continue as director. Mr. McKenzie continued to function as general manager.

Stein, Hall & Co., New York, is offering Hallmark burlap tubing as a streamlined wrapping which saves time and material for packing and shipping departments.

Sullivan Machinery Co., Michigan City, Ind., has appointed H. A. Smith Machinery Co., Syracuse, N. Y., as a distributor.

Babcock & Wilcox Tube Co. has transferred Harvey Wilson, formerly in charge of the Philadelphia sales office to the New York office as district sales manager. He will also have jurisdiction over Philadelphia, to which office R. M. Lackner has been transferred from Detroit. B. F. W. Seaburn has been placed in charge of the Detroit sales office.

American K.A.T. Corp., New York, has appointed D. H. Skeen & Co., Chicago, Ill., as exclusive sales agents in the Chicago territory for K.A.T. all-colloidal water treatment.

Manning, Maxwell & Moore, Inc., Bridgeport, Conn., have designed a new trademark for the gauges made by the Ashcroft Gauge Division. It is a shield bearing the words "Ashcroft, U.S.A., 1850."

Hewitt Rubber Corp., Buffalo, N. Y., held open house Sept. 28 to celebrate the completion of its plant-wide expansion and improvement. A large new building was dedicated and service pins presented to 54 factory and office workers.

Roots-Connersville Blower Corp., Connersville, Ind., has appointed J. T. Sutliff to succeed the late William Townsend in charge of the company's Chicago office at 122 South Michigan Ave.

General Electric Co., Schenectady, N. Y., won a top award in the machinery and appliance group of the Fifth Annual Modern Plastics Competition, sponsored by *Modern Plastics*, for a molded Textolite contactor-shaft submitted in the contest. The shaft, which combines in a single piece of material several parts and functions, will be an integral part of a new 50-ampere a-c contactor and magnetic motor-starting switch soon to be announced by the company.

American Trucking Association, Washington, D. C., is telling the public through national advertising the story of the truck driver aimed to personalize the employees of the trucking industry and to make more friends for motor transport.

Limerick Yarn Mills has moved its Boston office from 115 Chauncy St. to 99 Chauncy St. Richard C. Stidston, in charge of this office, is vice-president and sales manager of the mills.

D. W. Haering & Co., Inc., Chicago, Ill., manufacturers of quachrom glucosate and other water treating compounds, will construct a new plant in the Texas gulf coast area to cost approximately $25,000.

Republic Steel Corp., Cleveland, Ohio, in an effort to further the cause of goodwill between the Americas, has released a radio program to South America, in Spanish, featuring the development of major American industries in partnership with steel. On Nov. 12, the program was devoted to a dramatization of the textile industry.

Philadelphia Belting Co., Sixth & Spring Garden Sts., Philadelphia, recently appointed C. C. Anderson as southern sales manager, with headquarters at Greenville, S. C.

GOLDEN JUBILEE: Michigan Alkali Co., Wyandotte, Mich., observed its 50th anniversary on Oct. 17 with a dinner at which 567 employees were guests of honor. Above is shown J. B. Ford, Jr., vice-president, cutting the birthday cake while J. B. Ford, Sr., retired president looks on. At right is S. T. Orr, general salesmanager. The 567 employees had been with the company 25 years or more and each was presented with a gold watch. Heading the list of veteran workers was John A. Wolcott, master mechanic in the company's plant, who has been working continuously for Michigan Alkali for 49 years, joining the company in 1891, a year after it was founded by Capt. John B. Ford. Presentation of the awards was made by Emory L. Ford, grandson of the founder and president of the company; John B. Ford, Jr., and other officials. S. T. Orr was toastmaster. The company was founded by Capt. Ford, father of the American plate glass industry and a builder of Ohio River boats, when he was 79 years old. He died in 1903 at the age of 92 and was active in the company to within a year of that date.

"Sour Grapes never make Sweet wine"

OLD SAYING

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary twenty-section forty-two gauge machine . . . *And remember: Money invested in modern machinery not only pays big dividends of itself but also serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Woolen Equipment. Davis & Furber Machine Co. Brief data on checking of various machines to ascertain whether they are sufficiently modern to withstand the added burdens imposed by national-defense requirements, and a description of recent improvements in woolen frame spinning equipment, are included in the September issue of *Davis & Furber News.*

Vibration Insulation. B. F. Goodrich Co. A wide variety of uses for combination rubber and metal vibration insulation material is described in a recent bulletin.

Endless Belts. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc. Drive data on endless belts, including lists of standard sizes carried in stock, their capacities, and lists of more than 1,500 drives of all types available with these stock belts, is included in a newly released book.

Leather Belting. Graton & Knight Co. 1940 catalog lists and describes various types of belting available for different services; gives data on method of selecting the correct belt for each particular use.

Chlorine Handling. Electro Bleaching Gas Co. How liquid chlorine solutions are better handled in Neoprene hose is described in the September issue of *The Pioneer*, which also includes articles on the anniversary of mercerization, protecting plants from sabotage, and other items of interest.

Mothproofing. National Better Business Bureau, Inc. Suggestions for proper methods of advertising and selling textile articles treated to prevent moth damage are contained in an 8-page research bulletin.

Lubrication. Fiske Bros. Refining Co. 8 pages of data on lubricating textile machinery, including a table of recommended lubricants for over 150 types of bearings on textile machines, is included in the September-October number of *The Lubriplate Film.*

Motor Application. Westinghouse Electric & Mfg. Co. Essential data needed to fit the right motor type to any job requiring a small motor is included in a leaflet designated No. F-8525.

V-belts. B. F. Goodrich Co. Belt requirements for a variety of types of machines, together with data concerning each type specified, are included in 170-page Data Book 40.

Air Conditioning. Parks-Cramer Co. Unique series of cartoons pointing out value of company's humidifying and other equipment in cotton manufacture is included in September issue of *Parks' Parables.*

Textile Chemicals. E. F. Houghton & Co. Textiles for defense, wet-processing and the A.A.T.C.C., and worsted oils and combustion are three topics discussed in the September-October issue of *The Houghton Line.*

Fluorescent Equipment. Miller Co. Continuous fluorescent lighting for general illumination, giving a lighting level of 50 foot-candles, is described in a new 8-page bulletin which includes photos of installations in textile mills.

Knitting Machinery. Wildman Mfg. Co. Single-head, single-unit, full-fashioned hosiery knitting machines are described in a 16-page booklet which includes photographs of the machine, its parts, and hosiery knitted thereon.

Welding Materials. Lincoln Electric Co. 56 pages are devoted to descriptions and photographs of various types of welding metals and other equipment, together with data on selecting proper types, in Bulletin 402.

Neoprene. E. I. du Pont de Nemours & Co. Manufacture of braided-type hose from rubber and Neoprene are described in the September issue of *Neoprene Notebook.*

Rayon Sizing. Charles B. Johnson. October issue of *Rayon Warp Sizing Specialist* contains articles on textile courses of International Correspondence Schools, use of rayon in military fabrics, etc.

Fire Protection. Associated Factory Mutual Fire Insurance Cos. How proper storage of baled cotton prevented a textile mill fire from becoming serious is told in the October issue of *Factory Mutual Record.*

Mothproofing Agent. Merck & Co. Folder describes properties and characteristics of recently developed mothproofing compound known as Amuno; gives data on licensing agreement by which method of application is controlled.

Travelers. Victor Ring Traveler Co. Some points on preparation for full long-draft efficiency are discussed in the October issue of *The Traveler*, which also contains other items of interest.

Stainless Steel. Industrial Steels, Inc. 115-page loose-leaf catalog gives data on wide variety of stainless steel products; thumb-tab index makes easy location of references to various products.

Plastics. New products using plastics are described and pictured in the October issue of *Bakelite Review;* of interest to textile men are mentions of fabrics waterproofed with Vinyl coatings, and use of resin-base aluminum paint for painting interiors of a textile machinery manufacturer's plant.

Wood Preserving. Wood Preserving Corp. Prevention of decay by use of chemically-treated timbers in textile mill roofs is the subject of an article in the September issue of *Wood Preserving News.*

Water Filters. Worthington Pump & Machinery Corp. New line of pressure filters for water purification, in all capacities, is announced, described and pictured in Bulletin W-210-B-26.

Electrical Equipment. Westinghouse Electric & Mfg. Co. New 64-page catalog No. 30-000, gives simplified data on choosing correct electrical equipment for motor, lighting, and feeder circuits.

Water Softener. Worthington Pump & Machinery Co. Hot process water softeners for boiler feed-water purification are the subject of 8-page Bulletin W-210-B27, which includes operating diagrams as well as descriptions of the equipment.

Stainless Tubing. Carpenter Steel Co., Welded Alloy Tube Div. Data Book covers applications, gives tables on corrosion resistance, physical properties, tolerances, weights, sizes, and diameters of stainless tubing; included is data on design, specifications and fabrication.

Arc-Welding Competition. James F. Lincoln Arc Welding Foundation. Booklet addressed to engineers, designers, and others, outlines $200,000 prize awards program for descriptions of new uses for arc welding and the advances and improvements made possible thereby.

Lighting Fixtures. Fostoria Pressed Steel Corp. Catalog ML-25 pictures over forty different fixtures for lighting specific work areas; each is briefly described, and its characteristics and uses noted.

Hosiery Control. Silk Grading and Testing Laboratory. Mimeographed booklet describes tests which company is set up to carry out, and lists price of each.

Dyeing Assistants. Carbide & Carbon Chemicals Corp. Folder No. 2 gives uses, properties, and possibilities of glycols; textile mill uses include as assistants in dyeing and printing, and as hygroscopic agents for moistening various products.

Caustic Soda. Michigan Alkali Co. 56 pages are devoted to describing caustic soda: its properties, reactions, forms available, methods of handling, how to dilute, and methods of analysis.

Clutches. Carlyle Johnson Machine Co. Revised data on expanding ring friction clutches is contained in a new 10-page catalog; a separate bulletin describes multiple disk type clutch in single and double, wet and dry plate types.

Knitting Machines. Wildman Mfg. Co. Illustrated leaflet pictures company's interlock machine, contains sample of cloth knitted thereon, and briefly describes the machine.

Fluorescent-Lamp Controls. Westinghouse Electric & Mfg. Co. Line of fluorescent-lamp controls, ballasts, and capacitors for single and multiple lamp units is described in four-page illustrated folder, No. F-8505.

Capacitor Equipment. Westinghouse Electric & Mfg. Co. Capacitor rack and switching equipment for indoor and outdoor service is described in Bulletin 49-200.

No Matter What Your Wants, . In-

QUALITY LOOM HARNESS EQUIPMENT

Stehedco

Will be found the most *efficient, economical, satisfactory*, for they are the products of the originator of many of the improvements in such equipment. They are products of science — made and tested with specially designed and patented equipment which, with the exceptionally high type skilled craftsmen, who make them, produce an unexcelled product.

Four large plants, strategically located in the U. S. A., and Canada, from which to order.

Steel Heddle Mfg. Co.

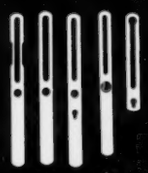
STEHEDCO HEDDLES - REEDS - FRAMES AND HARNESS ACCESSORIES

2100 W. Allegheny Avenue, Phila., Pa.

PLANTS

Philadelphia, Pa. Atlanta, Ga.
Greenville, S. C. Montreal, Que. Canada

BRANCH OFFICES ALL OVER THE WORLD



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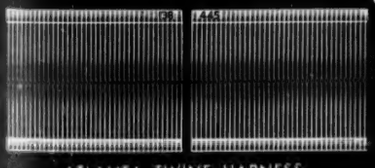
WASHERS



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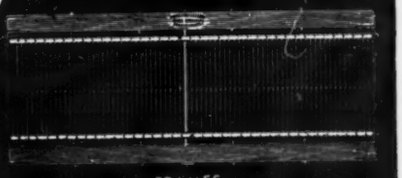
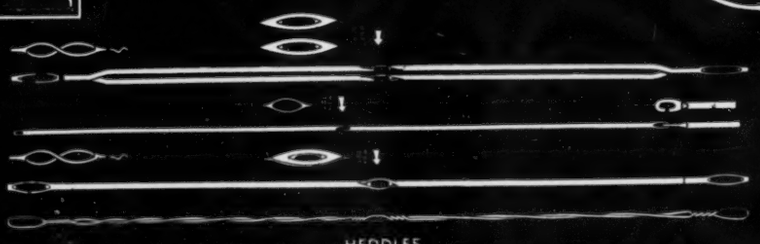


FRAMES

REEDS

SHUTTLES

HOOKS



HEDDLES

LOCK HOOKS

Preferred by Nine Out of Ten Mills

NYLON . . . wound on Pineapple Cones by No. 50 Precision Winders

30, 40 and 70 denier filament yarns for full-fashioned hosiery are wound on the No. 50 Winder equipped with the Pineapple Cone Attachment.

Pineapple Cones of fine denier yarns deliver freely on knitting machines, without plucks.

With the streamlined Emulsion Trough for Nylon, the yarn contacts the front of the roll, thereby reducing contact points and keeping tension at a minimum.

A small amount of tension can be applied to the yarn between the supply spool (or special sizing tube) and the Emulsion Roll.

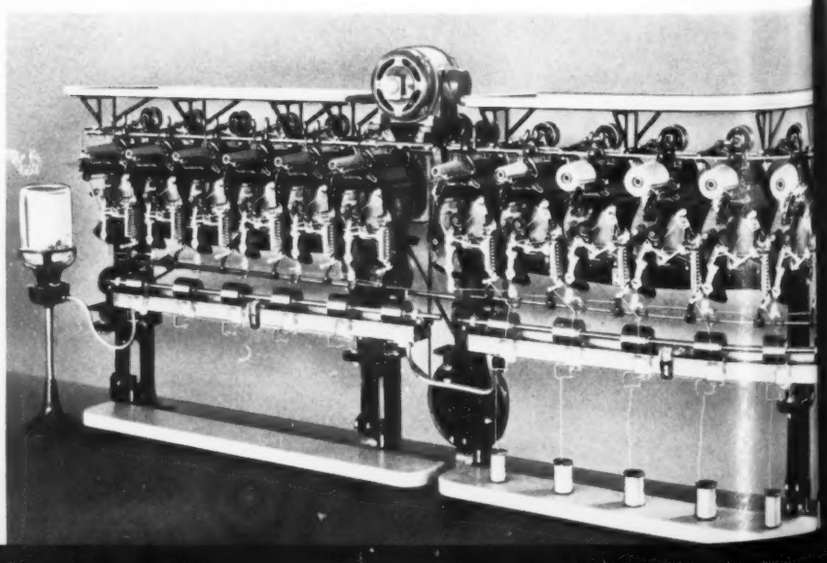
In 1940 and for many years past, more than 90% of all coned silk and rayon in the world has been wound on Universal Cones—an unequalled background which qualifies No. 50 Precision Winders for the winding of Nylon.

LEESONA

*Reg. U. S. Pat. Off.

UNIVERSAL WINDING COMPANY

Providence, Rhode Island



THE OVERSEERS' CORNER

THE DRAFT AND LABOR SHORTAGE

A PETE & BILL DISCUSSION

The air surrounding Bill was filled with profanity as he slammed his office door behind him. In awe, Pete sidled up wondering what was eating Bill this time.

"Guess we'll have to close the mill down in another month or two!" grated Bill with clinched teeth. "What men the draft ain't taking, the Government is—with those temporary high-paid Navy Yard jobs and construction projects. There's hardly a skilled mechanic left in my department. To make matters worse, the wage-hour law has fixed it so that a worker can't learn a new job without going to school somewhere outside the mill. Leastways, he can't practice on machinery in production anymore. And to rub it in a bit, Washington keeps yelling for more speed in turning out defense orders. The whole thing is simply cockeyed!"

"It's pretty tough, sure enough," agreed Pete. "But there's always a way. In the first place, you can improve working conditions in your room so that the workers won't be so anxious to leave. Next, you can train additional help by teaching them on Saturday mornings when the mill is shut down or you can set up special non-productive machinery for training purposes. I'll admit that this is a lot of trouble but it's the only way around the problem."

". . . as he slammed his office door behind him."

"Nut's to that idea!" said Bill. "I'm going to train my workers on machines in production like I've always done. The very idea of having a school at night or on Saturdays makes me sick. And as for those who quit for those temporary high-paid jobs—they'll come crawling back sooner or later. And I just dare one to ask me for a job!"

"You try that, Bill, and you'll end up behind the eight-ball so quick it'll make your head swim," warned Pete.

"I'll take my chance," concluded Bill.

What is the best way of coping with labor shortage which may result from the defense program?

Letters From Readers

Favors Picture Campaign Against Accidents

"Photographing Gruesome Accidents"
Pete & Bill, Sept., 1940

Editor Overseers' Corner:

Bill as usual is pessimistic regarding this intended progressive move on the part of Pete, when instead he should be complimentary and profit by this move perhaps in his own department. Gruesome drawings may not be so appetizing, but believe you me the drawing or cartoon can be digested with more grace than the experience of an amputated finger, arm or leg, or the loss of the sight of an eye, or even the minor injuries of a fracture of the arm, leg, skull, collar bone or nose. Posters may cost a few dollars to have made but the price is cheap if it tends to promote a little more caution and careful thinking. As for me, I do not care for this type of publicity, but I should gladly have a picture of my injury exhibited if it would save some one else from a similar accident.

LAMAR FOGEL
(South Carolina.)

Employee Parties Require Mutual Effort

"Company Picnics"
Pete & Bill, June, 1940

Editor, Overseers' Corner:

Perhaps the best general answer to the question concerning company picnics would be, "It depends." For in this case, it certainly does depend on the existence of one great accompanying factor—that of a definite program of employee relations based on a definite statement of the company's policies governing its relations with its employees. The company party or picnic is an excellent example of good em-

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

ployee relations, but it is useless unless incorporated in a broad program. It is absolutely no good if it is a mere annual affair in which no one is interested and a mutual bore to both managers and employees. On the other hand, the company picnic offers an excellent opportunity for the insertion of the factor of personal contact between employee and manager along some line other than mill work. If well supported by all the managers it will do its part well in promoting efficiency on the part of the worker.

WILLIAM NEWELL *(Burlington, Vt.)*

Name on White Elephant Publicizes Accidents

"Photographing Gruesome Accidents"
Pete & Bill, Sept., 1940

Editor, Overseers' Corner:

Is it good psychology to post gruesome photographs of injuries received in the mill? Yes, it's a good idea to post those pictures on the bulletin board so every one can see and profit from his fellow man's mistake. A person who looks at one of those pictures will say, "I don't want that to happen to me." Here at Avondale Mills, we have a very good idea about accidents. In no mill throughout the South is safety stressed more than it is here. We all know the symbolism of the White Elephant (denoting accidents) and that it pays no dividends. The department that has the most accidents each month has to keep the White Elephant for one month with the injured person or persons name on it in large letters. If there are no accidents then, Mr. Dunn, the superintendent, keeps it in his office. No one wants his name on the White Elephant for every one to see.

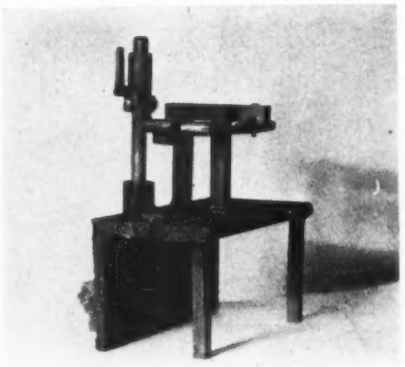
HOMER J. CABANISS
Avondale Mills, Sylacauga, Ala.

Overseers' Practical Helps

Welding Jig for Shuttle Feelers

The odd shape of shuttle feelers makes it difficult to weld them straight and to prevent properly welded feelers from warping as they cool. For overcoming these misalignment problems a simple jig, as shown, is a valuable aid. Two legs welded near one inside edge of a short piece of angle iron form a small platform. A bearing which supports an upright bit of shafting is welded to the vertical face of the angle. On the horizontal face are welded two upright bars, and across the tops of these is welded an overhanging crossbar.

A setscrew passes through the overhanging part of the crossbar and screws into the broken feeler at the point where the feeler blade would normally be fastened. The lower part of the feeler slips over the upright shaft and rests upon a setscrewed collar. Each half of the broken feeler is thus held in proper position during both welding and cooling.



Welding jig for shuttle feelers

J. C. Norman *(Alabama)*

Identifying Drawing Cans

For no apparent reason, the hank clock readings on our drawing frames began to gain on those on our slubbers, and in spite of this increase the slubbers were waiting for drawing. Since there was only a five-grain difference in the weights of breaker and finisher drawing slivers, something was evidently wrong. We finally decided that tenders were boosting production by running some stock twice through the finisher.

As an experiment, the number of cans required for finisher deliveries was calculated, the cans selected, and a white stripe painted around the top of each. As an additional measure, we painted breaker cans with a red stripe. Needless to say, clock readings on finisher drawing dropped to normal.

R.J.F. *(Mass.)*

Scouring Olive Drab

Evenness of shade in finishing olive-drab fabrics can be insured by using the following method. Load the goods into the washer and run around once to take out any snarls. Run in enough

HOLD BARBECUE AT TOCCOA

NORTH GEORGIA PROCESSING CO., INC., Toccoa, Ga., held its third annual barbecue on Oct. 5. The celebration, ending with an old-fashioned southern barbecue, is tendered by the management to operatives and friends of the company on the anniversary of establishment of the mill and in appreciation of their cooperation in making the enterprise a success. More than 100 handsome prizes were awarded the winners of the various contests. Events were arranged for both men and women, and were conducted by Superintendent Musk.

Among the 800 present were officials of the mills, including F. W. Thomas, general superintendent, Clark Thread Co., Newark, N. J.; A. W. Babbitt, assistant to Mr. Thomas; W. R. Beldon, manager, Clark Thread Co. of Georgia, Austell, Ga.; and A. J. Morse, manager of the Toccoa plant. These plants manufacture the celebrated J. & P. Coats and Clark's O. N. T. threads. Above are shown (left to right) Messrs. Beldon, Morse, Thomas and Babbitt.

water, cold or warmed to about 100° F., to cover the goods in the bottom, then open the drains and wash off for about 15 or 20 min. This gets rid of all the dirty soap which, if left in too long, will affect the white. When all soap is rinsed out, leave just enough water to cover the goods and add a sufficient amount of regular fulling soap to work up a good creamy lather.

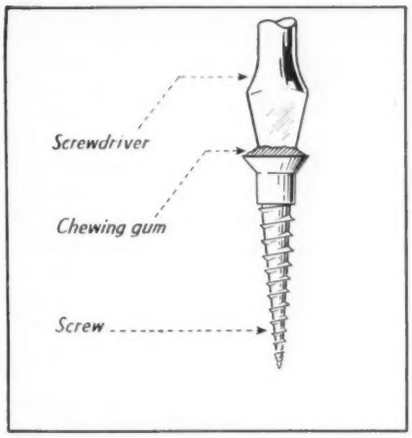
A better lather and brighter colors can be obtained by addition of one of the sulphonated higher alcohols. In a small barrel, dissolve 1½ lb. of the higher alcohol for each piece in the washer. Add this to the second soap. At the end of 20 to 30 min. everything will be cleared up. The final finished cloth will have a bright, snappy color and a smooth, clean handle.

David Welsh (*N.H.*)

For Holding Screws

If I am chewing gum while using very small screws or placing screws in hard-to-reach places, I take small bits of gum and place them on the heads of the screws. The point of the screwdriver is pressed through the gum, into the slot, and the gum holds the screw firmly while it is being placed into position and started.

W. C. Westbrook (*Ga.*)



Chewing gum holds small screws

Good Housekeeping for Mills

Theme of Northern N. C.-Va. Discussions at Spray Meeting

GOOD MILL HOUSEKEEPING was the theme of the fall meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association, held at Spray, N. C. T. C. Pegram, superintendent, Erwin Cotton Mills Co., No. 3 Mill, Cooleemee, N. C., served as chairman. Featured speaker was Luther H. Hodges, general manager, Manufacturing Division, Marshall Field & Co., who addressed the group on employee training. An abstract of Mr. Hodges' address appears on page 148.

Numerous methods of transporting and storing picker laps were discussed. One member suggested the use of lap trucks which carry eight laps in a horizontal position, storing the truck on the spare floor until needed. Disadvantage of this system is that the laps are exposed to air and contact, both of which cause considerable waste. Also, hernia may be caused by a man straining to put up the top lap. Laps can be transported on trucks in a vertical position if mill alleys are wide enough.

A mill running a large number of different colors has an especially tough problem in deciding whether to open a bale of cotton for a small amount of color and rebale it, or to run it all through into lap form. It usually is not possible to hold the extra raw stock in the form of roving because of the large number of bobbins which would be tied up. Majority of the mills reported that they keep extra stock in the picker room, but several members declared that it is better to close up the bale again, rather than to leave a lot of colored stock in the picker room for several weeks.

Transporting sliver in cans was said to present a real problem because it tends to fall off the top of the can, causing waste. Cutting the sliver causes shorter package. It was suggested that a truck equipped with a high, smoothly-finished rail might keep the sliver in position.

A good method of keeping filling boxes out of alleys is to nail a piece of 2x4-in. lumber to the floor and line the boxes against it. A member reported that he doffs filling into individual 12x14-in. boxes holding 138 bobbins or a side to a box. In the weave room is a space 100x100 ft. which contains around 125 different kinds of filling stacked five boxes high against rails nailed from post to post. The filling is identified by colored and numbered cards on the rail.

A mill using 200 different colors of filling reported that it has a special filling room laid off and numbered for each type of filling and blend, which is stored in canvas baskets holding from 60 to 90 lb. In order to get the proper filling on the proper loom it was reported by one mill that a doff boy takes a numbered card off the loom and hangs it on a holder on his truck; when he accumulates a sufficient number of cards, he gets a load of filling, conditions it, and puts it back into the same box—handling the same filling straight through to the loom.

For conditioning filling, it was suggested that a collapsible wooden box with holes, or wire baskets, might be useful to facilitate penetration. Several mills reported that the filling is simply

UNION BLEACHERY HOLDS MAMMOTH BARBECUE

Photo by Coxe, courtesy "Greenville (S. C.) Observer"

MORE THAN 1,200 employees of Union Bleachery recently participated for the 15th time in an annual community barbecue at the Paris Mountain State Park, near Greenville, S. C. The group consumed 800 lb. of barbecue, 200 doz. rolls, 1200 bags of potato chips and 8,000 pickles. Among those present shown from left to right in the front row, were Ralph Belcher, Nelson B. Arrington, Mrs. Charles Brooks, Ernest Dunn, Ruthe Prince, Richard W. Arrington, Mrs. John W. Arrington, Jr., John W. Arrington, Jr., Paul Turner, "Gee" Turner and chief chef "Doc" Keith.

dumped in the boxes and not stacked, and that the yarn is steamed 30 min. to 1 hr.

AN IDEAL METHOD of storing warps, it was said, is to doff each warp directly onto an individual truck, where it is left until needed. These trucks have two rubber-tired wheels and do not take up very much more space than warps laid horizontally on the floor. This was agreed to be a better method of storing warps than standing them on end in racks, since it often is very difficult to get to the proper warp, and handling is hard on them.

Clean windows, it was reported, will save from 10 to 25% artificial light, especially in slasher rooms and similar places. Cleaning reflectors and lamps often saves as much as 33⅓% light.

Colored yarns stored near windows are likely to fade, it was said, if curtains are not kept over the windows or covers over the bins. Sometimes it is more efficient to "black out" windows which cause fading.

Several members agreed that at least 99% of spitting on the floors can be eliminated by explaining the unsanitary phase of this to people and by putting spit boxes around in convenient spots. One mill uses a spit box made of cast iron with a tin lid on it placed at a convenient height for the employee to raise the lid. Twice a week these are replaced with fresh boxes containing clean shavings. It was pointed out that spitting on the floor often causes accidents since rubber heels tend to slip on such spots. Painting corners white and keeping floors clean also was said to discourage spitters.

A new type floor finish, which eliminates the necessity for scrubbing with soap and water, was said to be especially effective for use in card and spinning rooms.

Ceilings should be swept down at regular intervals, it was agreed, to prevent dirt from dropping in the work. The weaver should follow the overhead cleaner around and pick falling trash out of the warps if the looms are not covered. Blowing-down of ceilings with air should be followed with a mop to dislodge trash which clings closely.

Social Security Laws

Analyzed at Gaston County meeting of S.T.A. Section

SOCIAL SECURITY and unemployment compensation laws were discussed at the fall meeting of the Gaston County Division of the Southern Textile Association, held at Gastonia, N. C., and presided over by H. Gilmer Winget, chairman. D. W. Lamber, of the Federal Social Security Administration, and Earl W. Brockman, of the North Carolina State Unemployment Service, led a forum discussion on the problems in their particular fields. Some of the points brought out during the discussion were as follows:

Every employer, regardless of the number of his employees, must report wages according to regulations. A firm with eight or more employees comes under the State unemployment compensation law as well as the Federal Social Security law.

Casual labor has been interpreted to mean "not in the usual course of an employer's business." For example, if a shoe shop should hire a colored boy to shovel snow off the sidewalks, that would be classed as "casual labor." The law usually considers that a corporation does not have any casual labor.

It is the responsibility both of the worker and the employer to see that the workers' credits are correct.

Since unemployment insurance came into effect in 1938, checks totaling $879,710.93 have been delivered to workers in Gaston and Lincoln Counties of North Carolina. The State of North Carolina has collected about $36,000,000 since the law became operative and has paid out $14,000,000, leaving a credit of $22,000,000.

A mill will not be allowed an apprentice permit if workers capable of handling the jobs in question are available.

A skilled laborer, such as a picker tender, registered in the unemployment office is eligible for work in another job, but can refuse it if he wishes. However, if the commission feels that he should take the other type work anyway, the case can be referred to a deputy if he continues to refuse.

NEW ENGLAND CLAM-BAKE FOR GOODALL OVERSEERS

AT QUEENSBURY LODGE, the summer home of Clifford Holdsworth on Mousam Lake, a clam-bake was recently given by Mr. Holdsworth for the overseers and assistants of the Yarn Division, of which he is superintendent, of Goodall Worsted Co., Sanford, Maine. After the clam-bake a variety of sports was indulged in; rifle shooting, badminton, golf, horse-shoe pitching, soft-ball, boating, etc.

Among the guests were Wm. S. Nutter, vice-president, F. Everett Nutter, general manager, Lloyd C. Greene, assistant to the president, all of Goodall Worsted Co.; Dr. Harvey Thornburg, director of Goodall and Sanford Mills; Thomas M. Goodall, treasurer of Sanford and director of Goodall; Harmon G. Allen, chairman of the board of Nasson College, John Greenwood and Fred Spence, retired overseers from the yarn division of the company graced the occasion as old-time guests.

Among the overseers and assistants present and pictured above were: Francis Moore, yarn division accountant; Chadwick Richards, assistant, and Hugh Hill, all from the yarn office; Winfield Trafton and Fred Nutter, wool and mohair department; Rudolph Colby, Edward Mitchell, carding and combing; George Heaton and Roland Carlisle, stock department; Ben Waddington, Edward Stubbs, George Simpson, Bert Chadbourne and Alphonse Brochu, drawing; Albert Spence, John McComb, Ovilla Lamarre, George McComb, Sam Briggs, Harry Waddington, and William Ambler, spinning and conditioning; Harold Lewis, shipping; Tom Holdsworth, oils and waste.

QUESTIONS & ANSWERS

Finishing Army Overcoatings

Technical Editor:

I was very much interested in the article by David Welsh in the September issue of TEXTILE WORLD on finishing army overcoating and speeding up fulling.

We have been using soap boxes in our mills for years and find that they are very good. Mr. Welsh did not mention the fact that you must have a good reliable soap man; otherwise you will get an uneven soaping as the ounces and yardage on all pieces are not the same. Therefore, your soap man must either add or cut down on his soap as required for each piece. With the latest types of fulling mills you can cut your fulling time from ¼ to ½ the time required with older mills.

Mr. Welsh recommends a heavy soap, with little alkali, if any. The heavier the soap, the longer it will take to soap up, as it is harder to liquefy so as to go through the holes in the soap boxes and to penetrate the goods.

For speed, I believe that a goods must be made right with the right stock in order to full as they should. Of course, the finisher can do a great deal to speed up production in fulling and scouring and still get his goods out right. In scouring alone he can save water, fuel, and at least ½ hr. of time to a loading. If by chance his goods are off shade a little, he can easily bring them back to shade—either on overcoating, automobile cloth, or men's or women's wear—merely by tinting them right in the washer. —J.E.W.L.

Needle Lines in Knitted Fabric

Technical Editor:

Inclosed is a piece of elastic fabric showing pronounced needle lines. Frequent cleaning of the dial and cylinder does not seem completely to eliminate this condition. We should be pleased to have you suggest causes for such condition, and remedy. (8737)

These pronounced needle lines may be caused by wearing of the slots in the cylinder or dial. If one or more of these slots is worn lower than the others, it will cause the needle to knit differently and produce such lines. Needles that are slightly bent might also cause such a condition. When knitting fabric of this type, quite a lot of tension must be kept on the cloth; this may cause needles to wear into the cylinder and dial, and also tends to bend the needles. If the slots in the cylinder or dial are worn, it would be best to have them reconed or replaced.

Lay on Spinning Frames

Technical Editor:

Much has been written about yarn diameters and the number of strands that can be laid side by side in one inch, generally spoken of as the lay, and the mathematical principles involved are well known. For increased yardage on the bobbin, it seems advantageous to have a lay as close as possible and still produce good winding, spooling, and weaving results.

I would like to know if any other TEXTILE WORLD readers have improved winding or weaving conditions by experimentally changing the lay on spinning frames. Perhaps some have even arrived at a constant or series of constants. (8751)

One practical mill man gives his views on the subject:

All the mathematical calculations required in the determination of the correct lay gears on spinning frames are considered of small importance by the practical spinner. He knows that in small changes of yarn numbers, the change in twist gear, which also drives the lay train, should maintain the correct lay. He may also have a table giving the coils per inch and correct lay gear which his previous experience shows has given good results on various yarn numbers. The machine builder's lay constant may aid him in approximating the required gear. He must also realize that factors other than lay gear also affect the correct build and yards per bobbin.

With all this and other data available, the final criterion will be his examination, with pick glass, of the yarn as actually built on the bobbin. Successful practical spinners say there is no mathematical substitute for this examination. Good judgment is worth more than all the data on the theoretical coils per inch based on the square-root of the yarn number.

Another authority submits the following:

The coils per inch, if laid close as in roving, can easily be figured by using the reciprocal of the Ashenhurst diameter formula $\left(\frac{1}{0.9\sqrt{\text{yds/lb.}}}\right)$ which is quite correct for weaving yarns, especially warp yarns. The close lay for a 20s warp yarn would be $0.9\sqrt{20}$x840, or 116.8 coils per in. A softer or harder twist would produce fuller and softer, or firmer and harder end, and a modification of the Ashenhurst, or some other formula, would have to be used.

Analysis of a number of bobbins, both warp and filling wind, has shown that no more than 30% to 40% of this close lay is used. Several tests were made in order to find the reason for the above fact, using lay gears that gave 20-30-40-50 and 60% of the close lay. A careful study of the bobbins made in these tests showed that any over 40% of the close lay resulted in winding the yarn in a series of ridges or ribbons and not in uniform coils about the bobbin. Bobbins wound in this manner did not have an even surface and would therefore cause trouble in the unwinding process, especially if done at very high speeds.

Further tests might show that a lower-arched or an eliptical shaped traveler might cause less rise and fall as the traveler rode around the ring, and enable a little more than about 33⅓% of the close lay to be used.

Streaky Effect in Tropical Worsted

Technical Editor:

We are inclosing a cut of a tropical-worsted cloth containing two-ply warp and filling. As you will notice the filling in this fabric contains a streaky effect which is very noticeable, particularly when viewed from the selvage side. The streaks run off and on all through the sample. We would greatly appreciate an opinion from you as to what causes them. (8670).

The filling in this fabric is very uneven. Due to twist distribution, the angle of twist varies and this introduces a variable reflecting surface. In addition, very thin places in the ply yarn cannot be beaten up into position by the lay during weaving. It is our opinion that this yarn was not suitable for use as filling with the weave in question.

The warp yarn is also very uneven, and the worst streaks are noticeable where very thin places in the warp are adjacent to heavy places in the filling.

Warp Breaks in Rayon-Wool Weaving

Technical Editor:

I am starting manufacture of fabrics from spun rayon-wool blend yarn, but am having trouble in weaving, due to warp breakage. The warp yarn is a 1/24s, composed of 60% spun rayon and 40% wool. The spun rayon is 1.5-den., 1 1/2-in. staple, dull rayon; the wool is 64s combed tops cut dry 1 1/2-in.

staple. Will you kindly state what the break of this yarn should be and also a suitable sizing formula for it. (8721)

Very little has been published on weaving of rayon staple and wool on the cotton system and we have seen no figures on breaking strengths. Undoubtedly, the twist has a decided effect on the strength. The twist factor for maximum strength for spun rayon yarns is less than that for cotton. For 20s yarn, maximum strength is obtained before a twist factor of 2.7 is reached.

Both starch base and gelatine base sizing compounds are employed on spun rayon. Courtaulds recommends for 100% viscose type rayon staple warps, the addition of 8 to 9% of size made as follows: sago 100 lb., tallow 8 lb., and water 80 gal. Agitate the sago with the water until evenly dispersed, boil and add the tallow, continue boiling for 2 hr. Bring the bulk of the mixture to 125 gal. by adding water if necessary, boil again for a few minutes, turn off the steam, and use.

In this country various types of starches, starch derivatives, and prepared sizes are employed in conjunction with sulphonated oils or tallow.

Filling-Yarn Containers

Technical Editor:

The writer is interested in securing information as to the types of containers used for carrying cotton filling from the spinning department to the weaving department, where it is placed into the loom magazine. We have tried numerous methods that are not entirely satisfactory.

As we manufacture towels, it is necessary for us to be careful that the method employed does not cause the pile to be pulled when going through the various aisles. The method must also allow weavers freedom of the aisles, as they usually run twelve or more looms. Any information on the above will be appreciated. (8755)

Some mill men recommend, as the best type of containers to be used for carrying filling from spinning to weaving departments, a pin board on which the filling is set on pins spaced just far enough apart so that quills do not touch each other. This board could be about 16x16 in., and arrangements should be made on the looms, so that an empty board can be removed and a full board set in its place.

As the next best type of container, these sources recommend an all-fiber box with rubber-tired wheels, which is pushed from one department to the other.

Poor Worsted Carding

Technical Editor:

I am sending you some samples of M.V. 3/8 top. Our problem is too much brush waste and too much top-roll waste in the drawing. The samples sent you are as follows: card sliver (not gilled), finished top, open-drawing brush waste, waste taken from top front roll in the drawing, and waste taken from bottom front rolls in spinning.

Our cards are fillet clothed and we have no humidification in the card room. We bring our scoured wool from the dryer damp, probably 12 to 13% moisture content, although no test results are available. We gill on intersecting boxes once, before combing on Noble combs running at about 4¾ t.p.m. We are now gilling our tops twice after combing, on open and intersecting boxes. We have no humidification in the combing or gilling rooms. Our drawing room has humidification with which it is possible for us to get about 45% relative humidity. We use most of our tops in about 48 hr. or less after making it, and have a humidified storage room for any surplus top.

We add about one-half to ¾% of olive oil, straight, at the end of our dryer, and approximately 1% of oil in gilling before carding, using a 25% olive-oil emulsion. We add moisture by running our ends over a moisture roll on our finished gilling. We add about ½% olive oil on our drawing gill boxes, using a 25% olive-oil emulsion. We noil between 11 and 13%.

We would like to have your opinion on the following questions: Is our top satisfactory, grade for grade, in every way? Is our carding good enough? How can we stop excessive brush waste, lapping on top rolls in drawing, and greasy rolls in spinning—this is worse on colored stock than on white. (8700)

The samples forwarded have been inspected. Visual examination indicates too wide a variation in fiber diameter in the top. We would grade it as a low 3/8; some might call it a blend of high ¼ and 3/8. The top contains a lot of tender fiber; this may be traced back to the grease-wool blend. The tender fiber will break in every operation and naturally will be a source of rubber waste, roller waste, and flyings.

Your carding can be improved. This quality should not be difficult to card providing card clothing, settings, speeds, and conditions as regards temperature and moisture are correct. You can obtain better results if you will add 1¾ or 2% of oil before carding, omitting oil at the gilling before combing. A better distribution of the oil will result and there will be less breakage in carding, gilling, and combing.

We suggest more gilling before the comb. A test using two gillings should offer convincing evidence of improvement in staple and reduction in noil.

Cold carding and combing machines, absence of moisture both in air and wool, combined with poor distribution of oil and insufficient gilling, result in excessive breakage during processing and reduce the average staple length of the top. Machines warm to the touch, 70% relative humidity, and enough moisture in the wool are ideal conditions for combing, gilling, and carding. 20 to 30% moisture is not excessive in wool going to the card. 16 to 18% moisture in wool is suitable for combing.

Try 1% of oil in the drawing. Apply it behind the can gill box, using a 25% emulsion. If the emulsion is not well distributed and the machines are cold to the touch, the oil will adhere to the rolls of the drawing boxes and short fibers will be easily picked up. In addition short ratching, excessive twist, and high speeds will increase waste.

We believe that your troubles are due to the original blend, lack of proper conditions in carding and combing, and poor distribution of oil in the processing. The oil itself may be open to criticism.

Knitting Rayon Fabric

Technical Editor:

We are inclosing a piece of fabric which you will note is knitted of rayon with a cotton thread used in the forming of the back. We are puzzled as to how this cloth is made and are wondering if you can advise us the best process to produce this material, the type of equipment and size of yarns to use. Can you tell me whether the rayon used in this is a 150 denier with 40 or 100 filaments? (8724)

This cloth is of plain-knitted coarse-gage construction and incorporates six ends of rayon and one end of cotton (two ply) per feed. The rayon is undoubtedly 40 filament but it appears to be heavier than 150 denier. The length of cotton yarn used is much less than the rayon, leading us to believe that the cloth is made on the principle of terry cloth, with a short stitch being used for the cotton yarn and a long stitch for the rayon. Although either latch or spring-needle machines could be used in making this cloth, we believe the sample was made on a latch needle machine.

Drying Woolen Blankets

Technical Editor:

Please suggest a method for drying woolen blanket fabrics to a given width. (8740)

These fabrics, as they come from the washer, are too wet to be placed in the dryer. Hence, they must first be given a run in an extractor. After extraction, the cloth is laid in folds, full-width, on a flat truck. From this truck, the fabric is fed to a tenter dryer fitted with steam coils and exhaust fans. The endless pin chains of the tenter carry the cloth through, full width, and make it possible closely to control the width to which the fabric is dried. A number of manufacturers supply such equipment.

If you plan only to do experimental work on a small basis, it should be possible for you to rig up a tenter frame more or less similar to those available for home use in stretching and drying curtains and such items.

LOOMFIXERS' MANUAL

COTTON SECTION—Chapter XII—Continued

By IVAR MOBERG

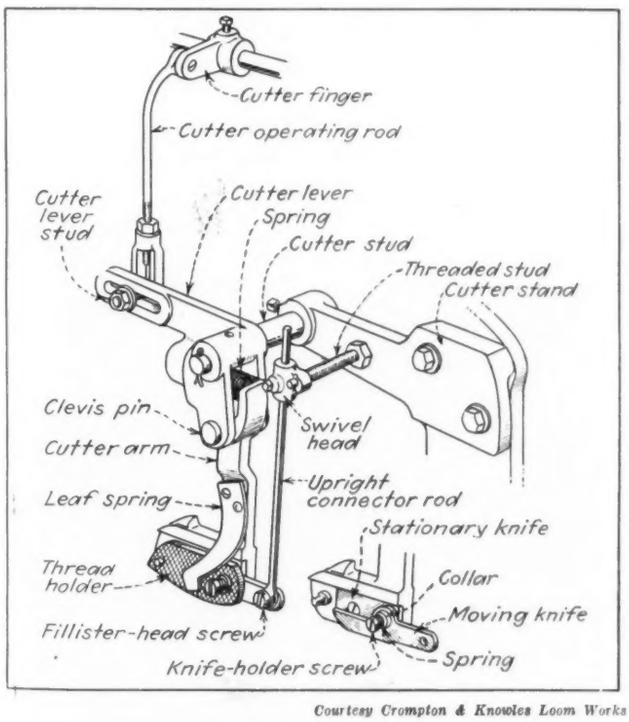
Filling Cutters

FILLING CUTTERS used with Crompton & Knowles stationary magazines are of several types but the No. 1511 cutter, shown in Fig. C84, is the latest development and widely used on cotton looms. The following discussion of installation and adjustment relates to cutters that have been in use for some time. In the case of new cutters, steps not applicable should be ignored.

Place the cutter upside down in a vise to test it for cutting and holding properties. In common with all filling cutters on bobbin-changing looms, the cutter must hold the filling so that it can be cut close to the selvage by the temple cutter a pick or two later. If the cutter fails to cut the filling cleanly, and to hold the cut end under normal knife pressure, the cutter should be taken apart and the knives examined. It is possible the stationary knife and/or the moving knife may have become dull and worn. If not too much worn, the knives may be resharpened, but, if badly worn, they should be replaced. The fiber thread holder, if so worn that it will not hold the filling, may be trued up by running its inside over a sheet of sandpaper laid on a smooth, flat surface. If this does not suffice, a new holder is called for.

In reassembling the cutter, first place the spring, then the collar, on the knife-holder screw. Tighten the latter until pressure on the moving knife is just sufficient to make the cutter cut the filling. Now apply the thread holder and make sure it will hold the cut filling firmly under the pressure of the leaf spring.

Install the upright connector rod and see that it pivots freely on the fillister-head screw. So place the swivel head on the upright connector rod that it faces toward the back of the loom. Without tightening the setscrew in the swivel head, slip it over the threaded stud in the cutter stand. Usually, there are two holes in the cutter stand for the threaded stud. Either may be used, so long as it gives the proper movement to the moving knife. The hole nearest the cutter will give less movement and that farther away, more. The latter hole is the one most commonly used.



Courtesy Crompton & Knowles Loom Works

Fig. C84. Filling cutter for stationary magazines.

Next, so clamp the cutter stand to the magazine stand that, with the former horizontal and the cutter opened 1/8 to 3/16 in., the moving knife will just clear the box plate. Mark the holes in the cutter stand on the magazine stand and, after removing the cutter, drill and tap holes in the magazine stand for the capscrews. Replace the cutter stand and so adjust it that the moving knife will just clear the box plate with the cutter opened as stated above. The experience of the writer is that the cutter cuts better if it is set to open not more than 3/16 in. With the cutter at the proper height in relation to the box plate, tighten the capscrew in the cutter stand.

So set the cutter finger on the setting-lever shaft that it will move an equal distance above and below an imaginary horizontal line drawn through the center of the setting-lever shaft. Tighten the setscrew in the finger in this position.

Now move the cutter stud in or out of the cutter stand until the cutter is 3/16 to 1/4 in. from the tip of a fully boxed shuttle. Turn the threaded stud in the cutter stand until it positions the upright connector rod in vertical position. Then tighten the checknut to hold the stud in this position.

Depress the setting lever into transferring position and move the lay until the bunter on the lay just touches the transferrer dog. With the cutter-lever stud central in the slot of the cutter lever, so adjust the length of the cutter-operating rod that the tip of the cutter arm will be 1/4 in. from the polished face of the box back. In this position, tighten the checknut on the rod head.

Move the lay to extreme forward position and make sure the cutter just snaps free from the box back. If it does not, move the cutter-lever stud nearer the fulcrum of the cutter lever. Readjust the length of the cutter-operating rod until the tip of the cutter arm clears the box back by 1/4 in., with the bunter against the transferrer dog. Again check clearance at front center.

Now move the upright connector rod up or down in the swivel head until the cutter, in cutting position, has an opening of approximately 3/16 in. Tighten the setscrew in this position. When the cutter is in normal position, the moving knife should be flush with the underside of the cutter. If the knife has too great a movement, it will go too far into the cutter and the cut filling and will not be securely held. If this is the case, it may be necessary to move the threaded stud to the hole nearer the cutter in the cutter stand.

As will be seen, the cutter arm is pivoted to the cutter lever by the clevis pin and held in a yielding position by a spring. This is to prevent breakage in case a shuttle should become trapped between the cutter and box back.

NEWS OF THE MONTH

It's Still Going on

Not only New York, but other cities as well, have been working tooth and toenail to further American fashion prestige—with an eye toward New York as the center. Various newspapers and retailers from coast to coast have been sponsoring design contests, promoting American fashion "names"—old and new—and awakening public interest in "native fashions." Hollywood seeks its own prestige—and undoubtedly exerts considerable influence, particularly in men's wear and women's sport clothes.

Undoubtedly the most important thrust in this direction is the announcement of "New York's Fashion Futures." One of the problems created by incapacitation of France was the removal of authority in the setting of style trends. This New York seeks to do through the concerted efforts of the Fashion Group (who's acting as quarterback), the Fashion Originator's Guild of America, the Uptown Retail Guild, the Mayor's Business Advisory Committee of the New York City Department of Commerce, and "individual designers of known ability."

These groups are collaborating to present a two-day showing of new spring fashions in apparel and accessories—to be held at Hotel Astor, New York, on Dec. 10 and 11. The show will be called "New York's Fashion Futures," and you can bet your bottom dollar it will be "the berries."

Recently, at the Boston Conference on Distribution, the fact was emphasized by Mrs. Edna Woolman Chase, editor-in-chief of *Vogue*, that possibly America will not have and would not want a real "couture" industry—in the traditional sense of the word. She gave the masculine contingent a swift biff by reminding them that if their wives and daughters are going to promote fashions (and thereby increase trade) they are going to need more dress-for-the-occasion cooperation from the men. ("Me?—dress for dinner?"—Yes, that's just what she meant!)

In past years, Ellerbe Wood—who is in the business of selecting original fashions for manufacturers to copy—has presented only French and English designs. Recently, and for the first time, Miss Wood's collection was entirely American in origination.

The New York press has been overrun during the last month with accounts of all sorts of fashion shows—put on at hotels and clubs, for special benefits and in numerous stores. Various publicized "occasions" such as "first-nights" at the theater, the ballet and the opera and the Automobile Show have inspired new costume ideas and brought out "best dressed" ladies.

Attracting special attention is the current non-commercial exhibition at the Museum of Costume Art in New York. Here, new original clothes are being shown next to the costumes, from many lands and many ages, that inspired them. These new creations, representing the work of some of our most talented designers, show how interestingly creative design can be inspired. Retailers and manufacturers have been asked to contribute financial support so that the museum can extend its activities to be of greater benefit to these groups.

School Deans Meet

Deans of the textile schools met in their semi-annual conference under the auspices of the Textile Foundation in New York Oct. 14 to 16. Frederick M. Feiker, advisor to the Foundation on textile education, presided. Representing the Foundation at the meeting were Franklin W. Hobbs, chairman; Frank D. Cheney, treasurer; Donald Comer; Edward T. Pickard, secretary.

Speakers who were heard during the conference included: D. E. Douty, president, U. S. Testing Co.; Lt. Col. Vere Painter, officer in charge, Inspection Branch, QMC, Philadelphia; Charles A. Sweet, of Wellington Sears & Co., recent advisor to National Defense Advisory Commission; Robert Schey, designer; Charles K. Everett, Cotton-Textile Institute; Margaret Hayden Rorke, Textile Color Card Association; Harold DeWitt Smith, A. M. Tenney Associates.

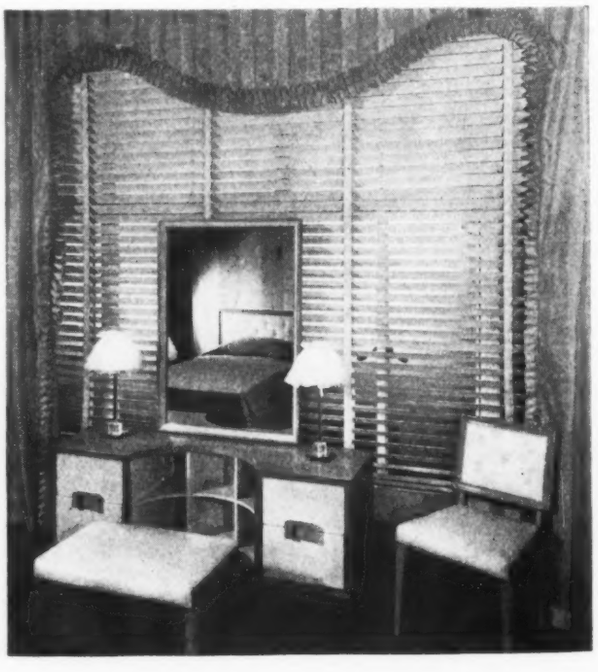
Print Cloth Trial Postponed

The trial of the print cloth group in connection with alleged violation of the Sherman Anti-Trust Act, originally scheduled for Oct. 14 and then postponed successively to Oct. 21 and Nov. 4, was postponed indefinitely just before the latter date. At the time of going to press, a new date had not been set.

Technicians to Meet Dec. 7

The Textile Designers, Analysts and Technicians Association will meet Saturday, Dec. 7, at Coventry, R. I. There will be a motion picture showing rayon fashions and a talk by a representative from the Rayon Division of E. I. du Pont de Nemours & Co.

This association held its last regular meeting at Coventry, Oct. 26, at which there was a round table discussion of mill problems involved in rayon slashing and weaving.



DECORATIVE CONTRAST is produced on this modern bedroom furniture of bleached mahogany by panels of white "Fabrikoid" pyroxylin-coated fabric, a leather-grained material developed by Du Pont. Open shelves of the paneled-front vanity are also lined with white. Vanity bench and chair are upholstered with the white material, as well as the headboard of the bed reflected in the mirror. The room is from R. H. Macy's Forward House, New York.

CALLAWAY MILLS have opened an unusual towel salon in their New York showrooms, where the new Callaway towels ensembled with Valway bath mats, rugs and lid covers are displayed. The style is ultra-modern and the lighting carefully engineered. Arthur R. Neill is in charge of towel sales and merchandising. The salon was designed by Alphons Bach. View shows one corner of it.

Association Executives Meet

Executives of a large number of associations met in New York Oct. 22 under the auspices of the Cotton-Textile Institute to discuss the problems in which they are all mutually interested. This is the latest of a series of such Coordination Conferences, and was held the day before the annual meeting of the Cotton-Textile Institute.

A good deal of the discussion centered around the national defense program and its opportunity and responsibility for the industry and its associations.

Defense Committee Appointed

The Southern Combed Yarn Spinners Association, through its president, Stuart W. Cramer, Jr., has appointed the following "defense committee" to cooperate in the matter of national defense and to help the spinners with Government specifications: T. H. McKinney, chairman; A. G. Myers, A. K. Winget, and R. D. Hall.

To Review Opp Decision

On Oct. 14 the Supreme Court agreed to review the decision of the Circuit Court at New Orleans in the Opp Cotton Mills case. The Opp company, with a number of intervenors who posted bond, challenged the legality of the Wage-Hour Administrator's determination of 32½c minimum wage for the cotton textile industry. Also, the company's petition challenged the constitutionality of the law. The company contends that, under the law, the administrator should have granted a wage differential favorable to several southern States, in accordance with prevailing wages and living costs.

S.T.A. Meetings

Several division meetings of the Southern Textile Association have been held during the last few weeks, details of the Gaston County and Northern North Carolina-Virginia meetings being carried in this issue. Other meetings which have taken place, and which will be reported in future issues of TEXTILE WORLD, include the South Carolina Carders and Spinners at Clemson, S. C., the Piedmont Division at Charlotte, N. C., and the Eastern Carolina Division at Durham, N. C.

Mill Securities Rise Sharply

Southern cotton-mill securities during the last few weeks have undergone one of the strongest up trends in recent years with many issues increasing from $1 to $10 a share. The present buying trend is said to be somewhat similar to that of the early fall of 1936, indicating that purchasers expect textile-mill business to be good for the next year or eighteen months. More bids than offers are reported.

10,000 Stores in Silk Parade

The International Silk Guild, in summarizing the results of the Silk Parade held during the week of Sept. 23 reports that some 10,000 retail stores all over the country took part in that annual promotional event.

Wage-Hour News

The Wage-Hour Division in recent weeks (1) on Oct. 24 began enforcing the new statutory maximum work week which became 40 hours instead of 42; (2) issued new "executive," "administrative," and "professional," definitions for exemption from the hours provision —in general, workers getting over $200 a month are exempt, while those getting less are covered; but this is only a generality; all employers should study the ruling carefully; (3) authorized four more regional offices to issue handicapped worker certificates: Boston, Cleveland, Birmingham, and Nashville; (4) suspended the 5% maximum of learners in knitted wear plants, so that employment of learners is much broadened; get full details from Washington on this; (5) regulations for employment of learners in the woolen industry were announced. The Committee wage order calls for 36¢ per hour but the new ruling permits learners to work for less.

Rayon Weavers Meet

The annual meeting of the National Rayon Weavers Association was scheduled to be held Nov. 14 at the Harvard Club, New York.

At Work on Wool Labeling Problem

The Wool Labeling Bill was signed by the President on Oct. 14 and consequently goes into effect on July 14, 1941. The new law was described in our last issue.

Meanwhile various interested associations are advising such members as may be dealers in manufactured wool products immediately to notify their sources of supply to state on invoices the exact fiber content with percentages, so that these distributors may be in position properly to identify the materials which may be delivered to them from now on and which may be on retailers, shelves when July 14 comes around.

It is understood that a committee of the Clothing Manufacturers Association of the U. S. A. will soon meet with representatives of the National Association of Wool Manufacturers to set upon a method of procedure under the new law. The National Cloak & Suit Industry Recovery Board will discuss the labeling situation

TEXTILE CALENDAR

National Rayon Weavers Association, annual meeting, Harvard Club, New York, Nov. 14, 1940.

U. S. Institute for Textile Research, annual meeting, Hotel Pennsylvania, New York, Nov. 14, 1940.

Fourteenth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, Dec. 2 to 7, 1940.

Southern Textile Exposition, Textile Hall, Greenville, S. C., March 31-April 5, 1941.

Knitting Arts Exhibition, 37th annual show, Commercial Museum, Philadelphia, April 21 to 24, 1941.

during its three-day executive session, Dec. 10 to 12 in Cleveland.

If the retailer desires to put his own labels upon wool merchandise, he may do so and he is protected legally if he has acted in good faith and has a guarantee from his source of supply stating that the goods are as labeled. This procedure is likely to work on backward until the fabric manufacturer becomes the sole responsible party. The Federal Trade Commission has wide powers in administering the law and the trade is hopeful that some of the dilemmas created by the law's language may be ironed out before its effective date. The law provides more peremptory remedies than usual, but the F.T.C. hopes it will not have to use them. Willful or persistent violators, though, will be roughly dealt with.

School Gets Fair Machines

Carding and spinning equipment recently on display in the Ford exhibit at the New York World's Fair has been purchased from Whitin Machine Works by the Philadelphia Textile School, according to a recent announcement. The machinery, which is of latest type will be set up in the school and used for instruction on cotton and rayon staple yarn production.

A WINDOW DISPLAY by Gotham Silk Hosiery Co. to promote its current lines for the Christmas trade, stresses the gift value of hosiery.

N. C. Manufacturers Convene at Pinehurst

The North Carolina Cotton Manufacturers Association held its annual meeting at the Carolina Inn, Pinehurst, N. C., on Nov. 7 and 8. Details will be carried in a later issue.

Revision Sought of New Bedford Labor Agreement

The Loomfixers' Union, Weavers' Union, and Carders and Ringspinners' Union at special meetings accepted a recommendation of the New Bedford Textile Council authorizing the Textile Council committee to notify the New Bedford Cotton Manufacturers' Association that the present working agreement will not be renewed in the present form.

The contract terminates Dec. 1 unless renewed by mutual consent. The agreement has been in force for two years, and under it strikes and lockouts are outlawed, and differences between the parties to the agreement are settled by arbitration. Points on which revision is desired, it is said, are provisions relating to seniority, work load and collective bargaining, the unions seeking to make these provisions more specific.

Underwear Institute Surveys Machinery

The Underwear Institute is carrying on a survey of the mechanical equipment of its industry to bring up to date the inventory of productive equipment which was last taken during the life of NRA. Government needs under the defense program make this survey timely. According to letters sent out by the Institute about a month ago the survey covers circular knitting machines as to make, diameter, and whether latch or spring needle. Warp-knitting machines are to be classified by make and width, and whether tricot, milanese or raschel. Sewing machines are to be reported under the several general types. The Institute believes that the results of this survey will save individual mills from being flooded with inquiries from various Governmental agencies.

Moriarty to Settle 3-Shift Issue

To enable production of textiles to be speeded up during the defense emergency Commissioner James T. Moriarty of the Massachusetts Department of Labor and Industries has been requested to authorize the operation of three shifts in Bay State plants engaged in such work and also to suspend the requirement that employees be given 45 minutes daily for lunch. A conference was held at the State House, Boston, on Oct. 21, attended by the commissioner and the following textile men: F. W. Steele, New Bedford, employer group; Joseph Salerno, William E. G. Batty, Edward Doolin, Joseph E. Carlen and William Baron, representing labor. Mr. Moriarty's decision, by which the several representatives agreed to abide, was expected soon.

CANNON MILLS has introduced a line of tufted bath mats and lid covers styled to match lines of Cannon towels and wash cloths.

15-Year-Old Boy Is Cotton Picking Champion

National Cotton Picking Championship is held in Blytheville, Ark., Oct. 15, was won by Howard Mason, 15-year-old Senath, Mo., school boy. Harold, who claims to have no particular "system," picked 129 net pounds of cotton in 2 hours. Runner-up was James Bradshaw, 27-year-old Reyno, Ark., tenant farmer who picked 117 pounds net and won $250. Contest, which included 135 pickers from 11 southern States, was the first of its kind in the United States.

Fabric in Offices

"Most men live two-thirds of their lives in offices," the Louisville Textiles, Inc., state in a booklet "Show Them How to Do It and They'll Buy!" The

moral is that if men are shown how to improve their offices they will take steps to do so. Proving that it practices what it preaches, the company shows in the booklet several pictures of its own beautiful offices in Louisville, Ky., and points out that their beauty does not depend on architectural treatment alone but is the result of carefully worked out color harmonies with colorful draperies, the principal note of accent in each room.

P. S.—Louisville makes—and sells—drapery fabrics.

Army Orders Bulk High in Men's Wear

During the three months ended Aug. 31, wool fabrics purchased by Governmental agencies accounted for at least 40% of the men's wear fabrics sold by mills reporting to the National Association of Wool Manufacturers. This situation does not take into account the large quantities of wool blankets sold, or other items such as socks and underwear containing wool. A marked increase in employment has occurred.

Working on Futures for Grease Wool

A special committee of the Wool Associates of the New York Top Exchange has been working on a futures contract for grease wool, and it has been locally reported that futures trading in this commodity may begin early next year. It is understood that the grease wool contract will supplement the wool top contract. Wool tops reflect primarily the situation in the worsted end of the market, and it is expected that the new contract will be of more interest to the woolen manufacturer and to raw wool dealers.

Beginning on Nov. 15 the New York Wool Top Exchange will quote spots either as a bid and asked price or as a nominal price. The previous asked-price basis was said to have risen out of relation to the market.

Discuss Freight Rates

A conference of representatives of Railroad Carriers and Manufacturers Associations was held in Charlotte, N. C., recently to discuss proposals to reduce rail freight rates on shipments of cotton gray goods to and from finishing plants in the South. It was held that some equitable figure on rates should be arrived at in order to meet motor truck competition.

W. S. Creighton of Charlotte, N. C., secretary of the N. C. Traffic League, said that no decision had been reached in the matter but that lower rail rates are apparently assured by prospective decisions.

ALEXANDER SMITH COLORAMA EXHIBIT in Rockefeller Home Center, New York, presents a new idea in decorating, featuring rooms designed to flatter the five color types: blonde, brunette, Titian, brown-haired, silver-gray. The exhibit is based on Alexander Smith rugs and carpets and a "talking mirror" actually lets the observer see herself in five different miniature rooms. You can "try them on" and decide which one becomes you most.

Britain Bans Silk Hosiery

The British Board of Trade announced a ban on domestic sales of silk hosiery beginning on Dec. 1. This action was announced on Oct. 18. The Hosiery Manufacturers Federation at once lodged a protest asking that the ban be postponed until after Christmas so that stocks on hand might be liquidated during the holiday season. It is understood that woven as well as knitted goods will ultimately be included in the ban. The reason given is that the available silk is required for war purposes or for export. The order does not affect the American trade as there has been virtually no exportation from this country of silk hosiery to Great Britain during 1940.

COTTON QUERY

There's a cabin in the cotton,
  But no cotton in the cabin;
Aunt Jemima's gettin' supper
  In a dress of acetate;
Uncle Peter in a polo shirt
  And pants of rayon yarn,
Wears a tie of purple silk-spun
  While he's milking in the barn;
Sara Manth's peelin' 'taters in
  Her brand new celanese;
Arabella in her bemberg
  's on the doorstep shellin' peas;
Baby Ned and little Eva,
  Crawlin' round the cabin floor,
Have on little lastex rompers
  from the 5 and 10-cent store;
Oh! the cabin's in the cotton still,
  Just like in verse and song,
But with no cotton in the cabin, will
  It be there very long?

—Charles E. Fenner

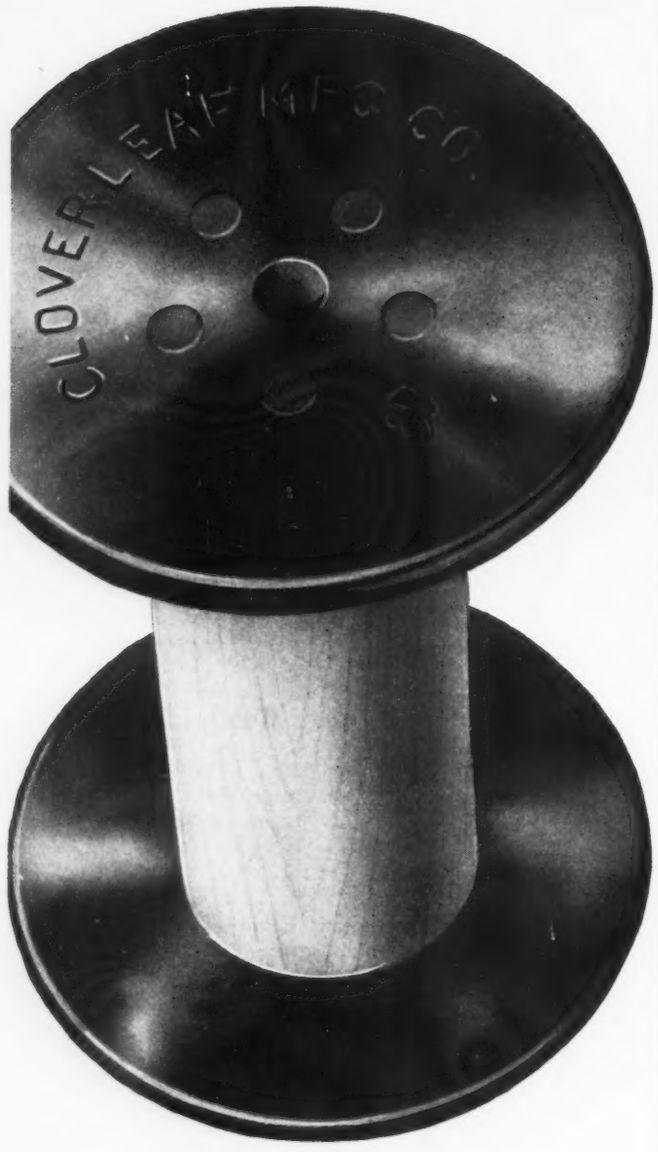
Hosiery Rules Hearing

Hosiery trade practice rules have been proposed by Federal Trade Commission, Washington, D. C., and a hearing is set for Nov. 19 in Washington. This is the outcome of negotiations pending for three years, initiated when it became apparent that the F.T.C. rayon and silk rules worked a hardship when applied to hosiery.

The new hosiery rules propose that generic words always accompany other descriptive words, as for example, Durene cotton, mercerized cotton, acetate rayon, Bemberg rayon. Nothing is said about what is to be done with the words Nylon, Vinyon, Lanital, Permalon, etc. Rayon is defined as of cellulose origin. Long-staple cotton is defined as not less than 1⅛ in. Tables of minimum twist for "Lisle" and "Crepe" are given. The words "Pure," "Pure Dye," "All" as applied to silk or the unqualified word "Silk" must be used for silk without any metallic weighting, which may however have necessary dyeing and finishing materials up to 10% (or up to 15% for black). Weighted silk must be labeled with percentage of weighting. Percentages for mixed fibers need not be stated except when fiber in question is less than 5% or when failure to state percentage has tendency to deceive.

Tribute to Carter

A tribute to the Wm. Carter Co., Needham Heights, Mass., on its 75 years of constructive enterprise, is paid by the Associated Industries of Massachusetts, in its publication. The details of Carter's 75 years were given in an article in the April issue of TEXTILE WORLD (page 54).



"America's finest fabrics owe much of their perfection to the perfect quality of America's finest bobbins."

CLOVERLEAF BOBBINS

Higher speeds . . . better fabrics . . . bigger profits. Manufacturers who throw their own yarns know the many production advantages—direct results of the super-strength, uniform quality, perfect balance and *complete suitability* of each type of Clover Leaf Bobbin . . . Ask *your* throwster.

CLOVER LEAF MANUFACTURING CO.
HONESDALE, PENNA. : : SINCE 1899

W. A. Kennedy, Dillworth Station, Charlotte, North Carolina
Dana R. Crawford, Box 176, Providence, Rhode Island

Cotton Goods Strength Maintained

Strong and buoyant situation in cottons was well maintained through October. Despite the well-sold situation on nearby goods, further buying pressure is expected. Heavy cottons are particularly strong, stocks are light and Government orders are tying up machinery ahead. Houses which normally would give options on goods are no longer doing so. Standard gray goods are strong and prices have risen fractionally during the month. As October closed 38½ in. 64x60s were 5¼¢, with 4-yd. 80 squares at 7⅛¢. The 38-in. 96x64 2.85 yd. jean sold at 9¢ with some houses asking 9¼¢. Optimism is general, but warnings against unspecified or blanket orders have been made.

Raw Wool Advance Is Embarrassing

All varieties of raw materials for woolen and worsted manufacturers have advanced and the small increases in price which have been made on civilian fabrics for next spring were clearly not a full reflection of the changed position. Recent bids on uniform cloths show gains of 35 to 40¢ a yard over the previous bids, and it is argued that this is an index of what may be expected on civilian goods. The wool goods field is under scrutiny by the Government, and yet so long as the raw material advances, it seems only reasonable that cloth prices must go up also.

In the news from mill centers during October, there is evident considerable starting up of previously shut-down machinery. Mills which have been closed for a number of years are being refurnished and put in motion. This means further demand for raw wool and continuing strength to the general position. Government orders are said to have occupied 30 to 40% of the machinery of the industry recently, but there is still ample yardage available for civilian use.

Rayon Market Remains Strong

The reduction in price of Nylon yarn, amounting to 17 to 32¢ per pound, was interesting news to the rayon market though it has no price relation at present to the quotations on standard rayon yarns. The latter are well over on the strong side of the market. The Nylon reduction put the 40-denier 13-filament yarn at $3.27, a reduction of 25¢. The company stated that it was passing on the benefits of lower costs due to operating economies and larger production. It is certainly not an effort to get larger business since the Nylon production is sold ahead as far as the company cares to take business.

In the viscose and acetate rayon field, sales are well balanced against production and no accumulations of yarn are reported. Buyers of gray goods have been endeavoring to get standard cloths under the market and as November opened it was less and less possible to obtain concessions.

Raw Silk Easier But Uncertain

Toward the end of October raw silk prices eased somewhat from the higher levels attained after the spurt of interest following Japan's joining-up with the Axis powers. Possibilities of embargo are still recognized. Contracts on the exchange and with raw silk importers carry clauses giving protection to the seller in event that delivery becomes impossible.

Prices on silk goods remain unchanged as they were not marked up at the time of the recent advance. Some silk underwear fabrics are slightly lower. Silk consumption by the hosiery trade remains on a reasonably large scale, though the trade is depressed by reason of the difficulty in getting higher prices from the retailer and the consumer.

Unsatisfactory Hosiery Market Persists

The silk hosiery market dragged along with little improvement through October. The higher price of Nylon hosiery instituted by some manufacturers aided silk in that the Nylon numbers at retail were raised quite outside of immediate competition with the silk lines. Now that the price of Nylon yarn has been reduced somewhat it remains to be seen whether the old, lower-price brackets will be revived by manufacturers. Some retailers have been endeavoring to set $1.50 as their lowest price for Nylon stockings, while among the larger hosiery manufacturers Nylons are still offered at $8.25 a dozen with a suggested $1.15 retail figure.

The spurt in raw silk prices early in October brought to a head some buying of silk stockings, but as the silk market hesitated toward the end of that month, buyers turned cautious. Although higher prices on full-fashioned silk stockings are necessary soon, it does not seem psychologically right to advance them until the raw silk market at least resumes its previous strength.

Underwear Trend Is Favorable

With growing stringency of fall goods as that season comes to a head in retail circles, underwear mills are obtaining a good return from their road salesmen on spring bookings. Machinery available for civilian use on fall goods is limited, and last-minute operations will encounter a sold-up market.

Wool Jerseys Gain Rank in Fashion

Fashion authorities have made considerable use of wool jersey in their lines for southern and resort wear, and the outerwear market is hopeful that progress toward making these items year-round numbers may be achieved.

Considerable play is being given cotton pullovers for men's wear for spring, 1941.

New "Yearbook & Catalog" Out

The *Textile World Yearbook & Catalog 1940* (published by McGraw-Hill Publishing Co., 330 West 42nd St., New York, N. Y.) has been issued. Its use by mill men as a means for keeping up-to-date is described in the Foreword as "a patriotic duty" because the present national defense program presents a challenge to the textile industry. Recognizing this fact, the publishers have made sure that the yearbook section is up-to-date and comprehensive.

The yearbook section contains sub-sections devoted to new equipment and chemicals introduced to the textile industry since publication of the 1939 edition; mill reference data, consisting of monographs, charts and tables conveniently arranged by branches of the industry; chemical tests for textile men; a textile bibliography; an index to Textile World for 1939; and lists of textile schools and associations. For the first time a special sub-section on "Synthetic Fibers" is included, which contains descriptions and photomicrographs of viscose, acetate, casein, soy bean, corn meal, cuprammonium, glass, Nylon, Vinyon, etc.

The catalog sections contain more than 200 pages of data on the products of leading manufacturers of textile machinery, equipment, supplies, accessories, dyes, chemicals, etc. As in previous editions, this new volume contains classified directories of manufacturers of textile machinery and equipment, and of dyestuffs and chemicals. An innovation is a thumb-cut index to the directory section for convenient reference to this much-used feature.

A copy of the *Textile World Yearbook & Catalog* is sent free to mills listed in *Textile World Mill Directory*. Mills may obtain additional copies at $2.50 each. To all others the book is sold at its list price of $5.00.

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The revolutionary Proctor Metallic-Clothed Worsted Cards have been in successful mill operation for over seven years now and consequently have gone far beyond the research and experimental stage. Mill men will tell you that these Proctor Machines give them a greater yield, increased production, clearer sliver and are entirely free from the necessity of stripping fiber because the card is so constructed that it strips itself . . . and that means a big saving in time, labor and stripping waste. ● The best proof of the important all-around advantages offered by this advanced type carding equipment is the fact that many mills, after having initial units in operation for several years, have installed additional machines. ● The Proctor Metallic-Clothed Worsted Card is also adapted for handling rayon staple fiber above five deniers. ● Why not give us the opportunity to show you what money-saving benefits this remarkable carding machine can bring to you ?

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This and That

A course in Textile Fibers and Fabrics is being given at the Massachusetts Institute of Technology, Room 305, Building 3, entrance at 77 Massachusetts Ave., Cambridge. Class meets Tuesdays 7.30 to 9.30 p.m. The instructor is Lawrence W. Guild, of L. W. Guild Co., Inc. . . . . A course in Textile Microscopy is held Wednesday 7 to 9 p.m. in the same room. Edward R. Schwarz is the instructor.

Shipment of 5,000,000 yd. of surgical gauze and 7,000 lb. of absorbent cotton, along with great quantities of medical supplies and food for the benefit of Chinese war sufferers, was begun by the American Red Cross Oct. 15.

Training in parachute and other aircraft fabric work will be given at Textile Evening High School, New York.

Nylon underwear will soon be launched by the Luxite Division, Holeproof Hosiery Co., Milwaukee, Wis.

Wool consumption for October at 7,152,000 lb. weekly, scoured basis, gives highest monthly total since 1937.

National Association of Woolen and Worsted Overseers held its 57th annual meeting at Boston, Nov. 9.

Dr. F. Bonnet, director of textile research and standards laboratory, American Viscose Corp., Marcus Hook, Pa., recently spoke on some of the newer textile fibers before the Greenville (S. C.) Rotary Club.

Quarterly wool stock report shows stocks of apparel wool as equivalent to 127,423,000 lb. clean, on Sept. 28, 1940 as compared with 118,514,000 lb. on Sept. 30, 1939. The gain was entirely in stocks held by dealers. Carpet wool stocks on the recent date totalled 40,085,000 lb. against 37,411,000 a year previous.

The wool carpet industry in 1939 turned out products valued at $159,900,744 according to the biennial census recently issued. This compares with $182,228,356 for 1937. Wage earners in 1939 totalled 28,728; in 1937, 33,940.

Australia exported 645,887,000 lb. of wool between Jan. 1 and Aug. 31, 1940, compared with 513,085,000 in the similar period of 1939 and 494,608,000 in 1938. The 1940 figure is the largest for any similar period since 1921, when comparable figures first became available.

A new finish, called Vitaset, has been announced by United States Finishing Co. It is stated that this finish is especially advantageous for applications to sheer fabrics, such as lawns, muslins, etc., imparting a sleek, crisp texture to the fabric, durable after repeated washings.

Narrow fabrics for belts and suspenders woven from a mono-filament yarn produced from vinylidene chloride are being distributed by George Frost Co., Shirley, Mass. The new synthetic, known as Frostone, is made by extruding vinylidene chloride, produced by Dow Chemical Co.

A permanent starchless finish for cotton fabrics, known as the Apponized finish, has been announced by Apponaug Co. A major advantage cited is the uniformity of hand; the finish is said to be durable for the life of the fabric, resisting both wear and washing.

Experiments on production of a synthetic fiber of the protein type from a new plastic made of waste cottonseed hulls are being carried out at the University of Tennessee, Knoxville, Tenn., under direction of John F. Leahy. At present the plastic is being employed in manufacture of loom sheaves.

Overseers from Dunean Mills, Greenville, S. C., were in charge of the program of the last meeting of the Greenville Textile Club, with G. P. Pruitt, chairman of the program committee. Brown Mahon, assistant general manager, Dunean Mills, was the principal speaker.

Industry and Social Welfare

Latter has to be paid for, and business accepts that responsibility

By GEORGE A. SLOAN *

IT IS A VERY REAL PLEASURE to have this opportunity to renew old friendships in South Carolina. Our meeting in Greenville tonight recalls many happy memories of those days in the late '20s and early '30s when I was associated with some of you in an effort to promote the progress and welfare of our great cotton textile industry. At the same time I miss the inspiring presence of some of my good friends like Tom Marchant, James P. Gossett, William E. Beattie, Aug W. Smith, A. F. McKissick, and other distinguished leaders in your community and business life who are no longer with us. May I remind you that these men and men like them gave their experience, vision and savings to build an Industrial South. And it was they and their predecessors who made Greenville one of the greatest textile centers in America. I know that you citizens of Greenville will never forget this fact, and that you will stand by these great plants which mean so much to the social and economic progress of your community and State. Into the national and local effort in social welfare have come the business men.

GEORGE A. SLOAN

All culture, art, education, social welfare, and civic effort has to be paid for. It can be paid for only by production, and the American business man is responsible for the orderly flow and proper distribution of that production.

Sometimes I feel that the American people, the most literate people on earth, generally hold the business man and our American enterprise system in too light esteem.

It is my firm conviction that the system of private enterprise which we have enjoyed for so many years in America can only thrive and be stimulated in an atmosphere of understanding and encouragement. I say this to you in all sincerity because I feel that industry has been the object of too many unjustified attacks, in one form and another, especially in those instances where it springs from class antagonism.

The business dollar works hard today. It may be said to serve five principal purposes. In the first place, it is devoted to the self-preservation of business—that is, in reserves, replacements, improvements, promotion, distribution of the product, et cetera. Its second use is found in a fair reward for labor. Its third use is in a fair reward to capital, or in other words, those people who supply the money for the building and operation of the plant in the first instance—to be more specific for those stockholders who built these cotton mills near Greenville and who, generally speaking, have received a meager return on these investments during the greater part of the past decade. Its fourth use is in its participation in the cost of government. Its fifth and final use is found in participation in social betterment.

* Abstract of remarks at opening of 1940 Community Chest Campaign in Greenville, S. C.

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They're steady as a rock and smooth as glass—inside and out. The three types of tops, Rolled Fibre, Turned Fibre and Metal, all guarantee smooth entrance and exit of delicate materials. Their *seamless* construction of tough Diamond Fibre insures a long and useful life. Standard Metal Bottoms are firmly held in place with a heavy metal ring which also grips the broad fibre kicking band. Made in standard diameters of 10", 12", and 14". All 36" high. . . . Send today for catalog H W 9. It shows construction details of Roving Cans and other Diamond Fibre material handling Hollow Ware units.

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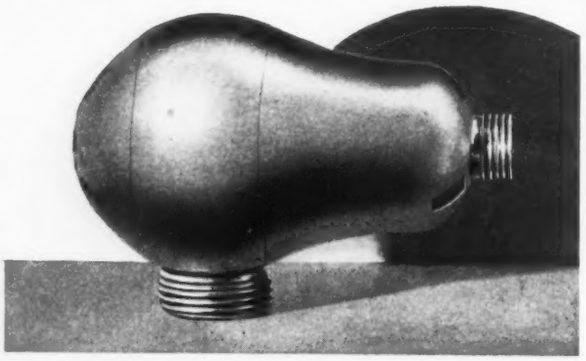

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The Turbomatic Self-Cleaning Humidifier is the same old Turbo with a diaphragm.

Diaphragm actuation of cleaning mechanism is used because:

Its on or off action is more *positive*.

It calls for *fewer* and less complicated *parts*.

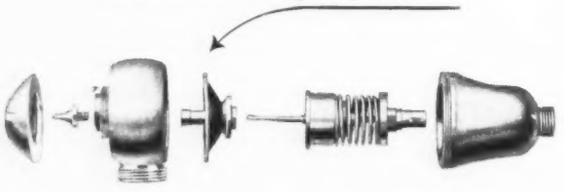
The whole device is *simpler*.

There is *no* likelihood of *sticking*.

And *no leakage* of expensive compressed air.

Being positive in action, with fewer parts, it is easier to care for, if after long, hard service it needs attention—as no doubt it may. Being simpler, with no likelihood of sticking or leaking, it is better. Diaphragm construction is what makes it so.

The Parks Turbomatic Self-Cleaning Humidifier is the same old Turbo, atomizing as only a Turbo can . . . but only the Turbomatic is Diaphragm-atic.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

Include Taxes in Costs

Defense burden makes this essential in figuring cotton-mill selling prices

Editor, TEXTILE WORLD:

THE COTTON MILL EXECUTIVE is once more confronted with the pleasant task of counting some anticipated profits, and of considering a dividend for his stockholders, and is therefore under the necessity of giving serious consideration to the proportion of the income of his mill which is to be taken by the Federal Government for income and excess profit taxes.

The shrewd mill executive is beginning once more to re-figure his costs and include some items that he has been forgetting or neglecting to put into his costs during the recent years, as he strenuously endeavored to figure a low cost and thereby justify the low prices at which he has permitted his goods to be taken by the buying public.

Our defense program will demand from the textile industry an increasingly large amount of goods.

We shall also be called on to furnish increasing quantities of cotton textiles to the British Army.

It is manifest that every man, woman, and child in the nation must make a heavy contribution to the cost of national defense and to the cost of operating the Government under present-day conditions. It is equally plain that the machinery for collecting taxes is too expensive and too cumbersome for the Government to attempt to reach more than a small percentage of the individuals and business concerns of the nation. This means that an increasingly heavy load of taxes will be piled on the manufacturer, converter, and large distributor, with the expectation that this load will be distributed in the final price of the finished article as it is sold to the consumer over the counter.

In the face of this situation, the intelligent mill executive must begin to calculate on how much of his balance-sheet earnings can be retained for the stockholders of the company and for normal corporate purposes. He may well expect that a large share of what his balance sheet shows to be normal earnings will be taken for taxes. No sensible business man, and certainly no patriot, can complain at this situation, but at the same time the executive is not doing his duty by his stockholders unless he takes all these matters into account in making up costs and selling prices.

The important thing is for the mill executive to know what portion of his apparent profits can be retained for his stockholders.

Obviously, the only way he can do this is to include in his costs the item of taxes so that the difference between his cost arrived at in this way and the price at which he sells his goods will indicate to him the amount of income he can retain for his stockholders.

One textile concern making heavy goods has set up a budget calculaton for the next 12 months basing production on previous records and estimating regular profits on the basis of previous records.

They have found out that it will take a trifle over one cent per pound on their estimated production to pay the income and excess profit taxes calculated according to the terms of the recent legislation covering this matter.

COTTON MANUFACTURER

Tribute to Sidney B. Paine

Frank Nasmith gives him credit for electric drive in English mills

MANCHESTER, ENGLAND

Editor, TEXTILE WORLD:

I NOTICED RECENTLY an obituary notice of Sidney B. Paine. I knew that he retired many long years ago from the General Electric Co., and I think I had lost touch with him, although I believe that on one or two occasions I was in communication with his son.

My acquaintance with Mr. Paine goes back many long years. I certainly remember the paper which he read before one society in England somewhere about 1902. The matter of the paper related to the electric driving of cotton mills, and he wrote it under the auspices of the British Thomson-Houston Co., Ltd., which is the British associate firm of the General Electric Co., Ltd., of America. I knew very well John Shaw of the British Thomson-Houston Co. who also unfortunately has passed on. He was a very much younger man than Sidney Paine, but he was a disciple of the latter, and looked up to Paine almost as a demi-god.

Sidney B. Paine

I would like to add my regrets to many that must have been expressed in the passing of this great pioneer, and to state quite candidly that in my opinion he initiated electric driving for mills in this country. Anyway he gave to the electrical engineers of this country the idea that textile mills could be driven electrically, although for many long years there was considerable controversy as to the relative advantages of different forms of driving, and I must confess that of evidence forthcoming, in the early days at any rate, the old medium-running, reciprocating steam engine with rope drive, the steam being generated in Lancashire boilers, showed a saving in cost over and above anything that electric driving could then offer.

There was no doubt about the flexibility of electric driving, but there was a great deal of doubt in regard to mill driving costs. Anyhow it was not until somewhere round about 1910–1911 that a joint committee of the Textile Institute and the Electrical Engineers started to investigate the matter thoroughly.

Long before this, Sidney Paine had provided anyone who cared to study the matter with sufficient material to demonstrate the fact that the use of electricity in textile mills was bound to come.

I would like to add my meed of praise to the work he did. I was very friendly with him over a number of years. I admired his work when I was still a young man, and when I was acting as consulting engineer, I utilized a lot of his thoughts and findings.

FRANK NASMITH, *Executive Manager, Universal Winding Co.*

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A double refining process makes this caustic soda low in salt content, low in carbonates, and extremely low in iron. In addition, Pennsylvania Salt Manufacturing Company maintains the most rigid quality-control to safeguard the uniformity of the product, using, among other methods, that of spectrographic analysis — one of the most sensitive and precise known to science.

This caustic soda is supplied in aqueous solution in 8000-gallon tank cars, as well as in solid, flake, or ground form in drums. Our technical staff will gladly help with all problems of handling.

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It's worth a lot to be able just to set your Amco Controls and *know* that the correct humidity condition will be maintained, regardless of temperature changes. Modern control may be all your system needs to bring it up to date. Let an Amco Engineer find out, without obligation. American Moistening Co., Providence, R. I. . . Boston . . Atlanta . . Charlotte

AMCO *Humidification*

Training For Textiles

Courses should include labor-relations, advertising, etc., as well as engineering

By LUTHER H. HODGES,
General Manager, Manufacturing Division,
Marshall Field & Co., Spray, N. C.

THERE ARE TWO MAJOR PHASES in training for textiles. One is technical training and the other is liberal training. Both are absolutely necessary. Any one with ordinary application can get technical training, although there are differences in technical aptitude of various persons. Twenty years ago there was a great difference of opinion between the mills and the textile-school graduates, which resulted in failure of many young men to make good in the mill. The attitude of both has changed in recent years, and today the mills are taking practically all of the graduates and most are doing well.

It is advisable today to go further than formal textile-school training—and establish a community program of education. Marshall Field & Co., for example, has recognized this for 21 years, during which time a well-rounded educational program has been developed at Spray. There are from ten to 20 classes each year reaching from 100 to 200 students, some of whom attend for several years. We have established a textile training school with a full corps of teachers, and in addition to the textile studies have introduced accounting, engineering and chemistry, sometimes by lecture. To show our own company's point of view, we have training courses in which top executives, managers and other key men sit down and study the problems. Foremen have meetings in which they expose themselves to new ideas. All of this has been tied together so effectively that I think within the next few years it will be necessary here, or in any other community with a similar program, to secure a high-class man, making as much money as you or I, to give his full time toward training young people.

In reference to what I call liberal training, there appeared sometime ago in the *Journal of Commerce* a striking editorial statement saying that business now, with the defense program putting thousands of new workers on the payroll, is finding it almost impossible to locate trained leadership to handle the workers. It further said: "We cannot afford to take for leadership in the future, technical men from the ranks, men who know how to run their machines, because those men do not have enough of the liberal attitude toward how to handle people in new conditions, and we are likely to find ourselves in the grasp of the law."

A year ago Fred Feiker, of the Textile Foundation, proposed a postgraduate school for textile graduates. I heartily approve of the idea and feel that the courses should include labor relations, accounting, advertising, etc. In discussing the subject before the deans of all the textile schools in America, I said that I think that the textile school of the future will have to have all these courses—and could even afford to put in a course in packaging. There is no job anywhere which does not require selling, and this should be taught in the schools. In addition, there should be all sorts of engineering subjects, because in the future you will not approach a wage rate unless worked out scientifically.

[*Editor's Note*—Above is abstracted from Mr. Hodge's address before the recent fall meeting of the Northern North Carolina-Virginia Division of the Southern Textile Assn.]

Textiles in Red Cross Call

Form entire division for 24th annual campaign, Nov. 11-23

TEXTILE LEADERS in New York have formed a complete division to campaign in the 24th annual Roll Call of the New York Chapter of American Red Cross. The division, headed by E. G. von Duhn, has organized all branches of the trade to rally strong support of Red Cross domestic activities in the campaign to be conducted from Armistice Day to Nov. 23.

L. H. Brown, president of Johns-Manville Corp., is general chairman of Roll Call; S. S. Colt, president of Bankers Trust Co., is vice-chairman; Leon Fraser, president of First National Bank of New York, is chairman of special gifts. Mayor Fiorello H. LaGuardia is honorary chairman.

Group chairmen of the Textile Division are: Factors, J. Frederick Talcott; Cotton Textile Merchants and Selling Agents, Jacques Bramhall; Cotton Converters, George S. Pollitz, Jr. and Henry M. Leslie; Carpet and Rug, Herbert Gutterson; Bag and Burlap, William G. Dwyer; Hosiery, Charles Chipman; Silk, Ward Cheney.

Other chairmen are: Wholesale Linen, H. J. Letcher; Wool Clippings, Robert Miller; Textile Refinishers, William A. Rothholz; Decorative Drapers and Upholstery Fabrics, Paul Gadebusch; Woolen, William Fraser; Labels, A. A. Baum. Among trades allied to textiles, Ernest K. Hallbach heads the Dyestuffs Group.

E. G. von Duhn, head of the Textile Division, in urging full support of the approaching campaign, issued this statement: "The American Red Cross has completed the first war year with double credit. Simultaneously this great organization gave continuous war relief to victims of invasion, and also carried on its regular domestic duties. Now, our Red Cross appeals for support of its normal activities.

"The American Red Cross provided war relief in the form of ambulances, hospital equipment, medicines, food, nearly a million garments, over 5,000,000 surgical dressings. At home it aided victims of 102 disasters, and rendered many other services.

"New York Chapter shipped 85,000 relief garments to war victims, and is shipping 87,000 more. It shipped 868,000 surgical dressings. It aided 1,200 returning, needy American refugees.

"Locally, the Chapter cared for thousands of needy, disabled veterans; trained thousands of persons in first aid, life saving, home nursing and nutrition. Chapter volunteers served in 16 hospitals; Brailled books for the blind; made 1,347,555 surgical dressings for local hospitals; staffed a motor corps; distributed 100,000 magazines to hospitals, and gave many other services. Help support this work by joining Roll Call, Nov. 11 to 23."

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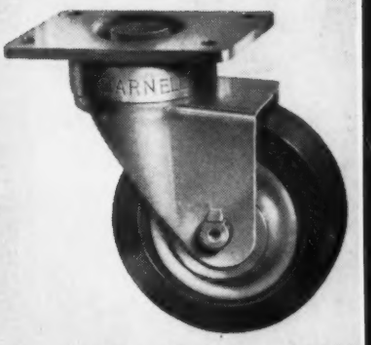

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Institute Stresses Promotion

(*Continued from page 71*)

"Your cost of distribution is very low, if not the lowest of any industry with which I am familiar. This is economically sound and certainly nothing which a buyer should complain about. But in your present distribution set-up, the same salesmen who call on converters, jobbers, the cutting-up trade, and even retailers, also have to service industrial accounts. Many of our group comment that they get little technical assistance and no constructive help from these men.

"In the long run, you could merchandise better if you had a more stable market. Then your salesmen would not be continually urging buyers to buy because goods were below cost and the mills were losing money. In this sales appeal, there is not one word about the most important factor that makes the industrial purchasing agent buy textiles, or anything else—QUALITY.

"While we think of industrial fabrics as mostly in the gray state, many uses require finishing operations, and to my mind this is where you can best meet your newest and most active competitor, the plastics field."

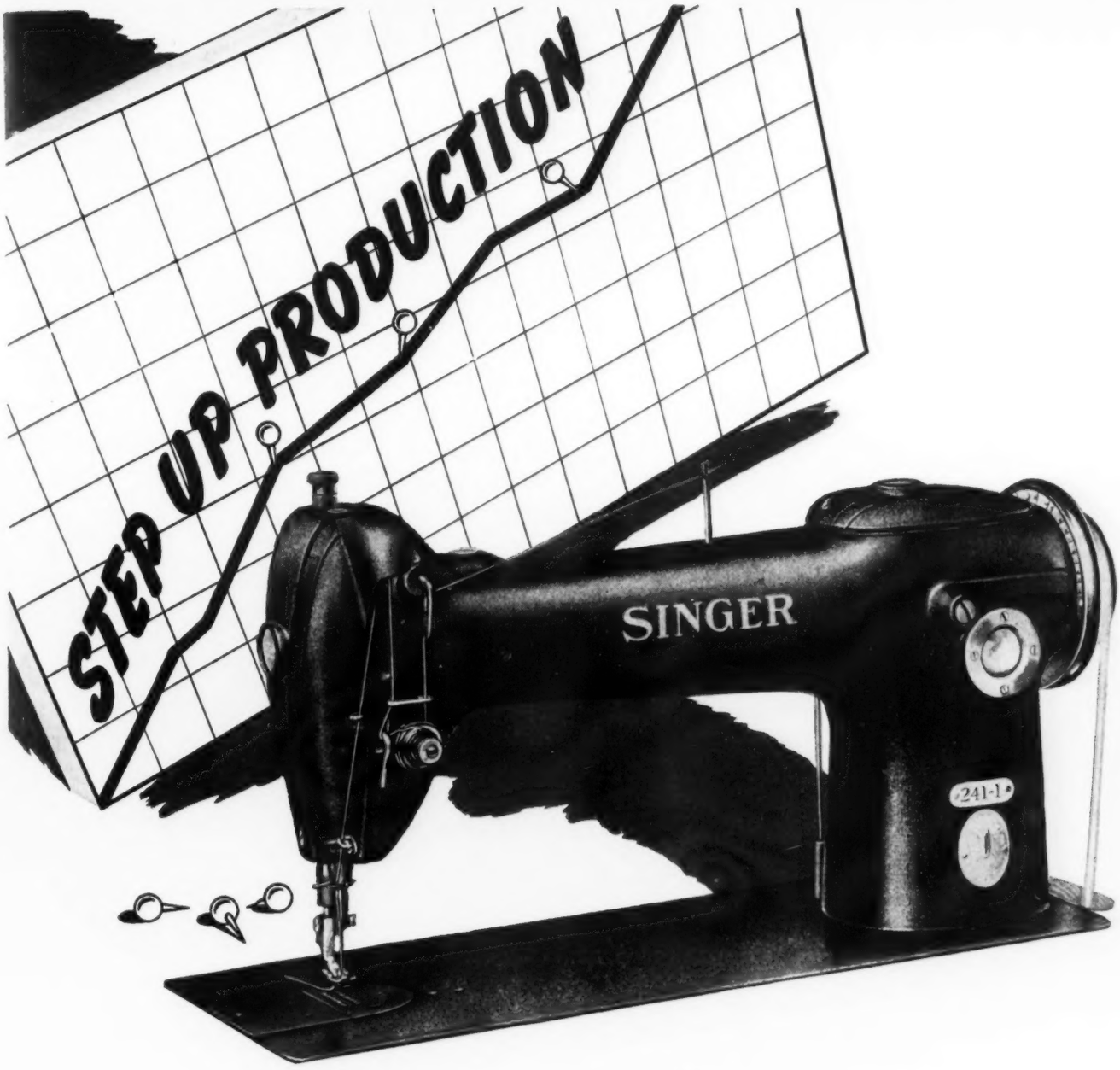
AT THE LUNCHEON, Paul Halstead, secretary-treasurer of the Institute, said that the cotton-promotion dollar went a long way. So far in 1940, he said, a new record of over 70 yd. annually of cotton goods consumption per person is being chalked up, against a 1937-39 average of 67 yd. and a low of 50 yd. at the depression's bottom. To effect the goal of 10,000,000 bale consumption, 90 yd. per capita is needed.

Charles K. Everett, in charge of the Institute's new uses program, gave a high-light summary of recent contacts to illustrate the service of his department. Navy, he said, had asked for a cheap wiping cloth to replace wiping rags; Navy's towels in future will be all-cotton; Dept. of Agriculture will use more cotton fertilizer bags under AAA; in conference with defense officials the Institute had urged that Government fastness, shrinkage and other standards parallel commercial standards; a new exhibit of cottons has been shipped to the Smithsonian Institution; etc.

Miss Nova A. Eisner, now in charge of the Institute's fashion promotion, expressed belief that the future for fashion in America was bright, indeed. "With American styling for American wearers," she said, "it is logical to promote an American fiber—cotton." Creativeness is the soul of fashion, she said, and fashion is style stamped with the approval of the discriminating user.

ELECTION of the following to the Board of Directors of the Cotton-Textile Institute for three years was announced: D. W. Anderson, Allan Barrows, Fuller E. Callaway, Jr., J. A. Chapman, Jr., J. H. Cheatham, A. H. Crossman, E. S. Cunningham, R. C. Dick, W. H. Entwistle, Paul Gifford, L. O. Hammett, Robert E. Henry, Percival S. Howe, Jr., Allen F. Johnson, Harvey W. Moore, T. M. Norris, H. H. Rapp, Paul A. Redmond, H. G. Simonds, W. H. Suttenfield, R. C. Thatcher, A. K. Winget, George W. Wright and Walter S. Wyman. H. O. Ball was elected for a one-year period.

The Board of Directors elected the following to its Executive Committee: George S. Harris, Chester E. Hatch, G. H. Milliken, J. T. Phillips and R. C. Thatcher. The Board also elected officers: Goldthwaite H. Dorr, chairman of the board; Claudius T. Murchison, president; C. F. Broughton and F. W. Symmes, vice-presidents; Paul B. Halstead, sec.-treas.



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The Singer Class 241 will step up production in your plant because of its higher speed and, because hand oiling is unnecessary, operators can devote all their time to production.

Another important feature of the 241 is "Superfinished" bearings of microscopic smoothness, bored and aligned with utmost accuracy. They insure a perfect oil film resulting in quieter-running mechanism which withstands severest use and gives lasting service.

Test the Singer Class 241 machines in your own plant on your own work. There is no cost or obligation. Contact the nearest branch of The Singer Manufacturing Trade Department, or mail the coupon for complete information.

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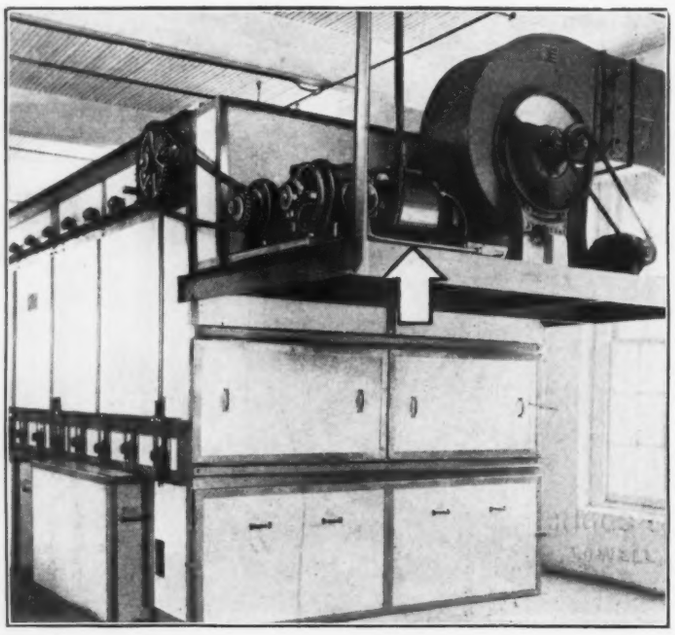
Street_____

City_____



Accurate
SPEED CONTROL

• the "invisible" ingredient in textile quality

If every yard of cloth that goes through the mill were exactly the same texture and count—every day the same in temperature and humidity—textile machines would have very little need for speed adjustability. . . . But changes in work schedules and variations in conditions and materials demand that some provision for changing machine speeds be made. Otherwise, both quality and quantity of production suffer. . . . As on this Tenter and Dryer, manufactured by Riggs and Lombard, Inc., Lowell, Mass., REEVES accurate and infinitely variable speed control units are extensively used throughout the textile industry. Write for Catalog G-397, which illustrates and describes many process-improving, cost-cutting installations.

REEVES PULLEY COMPANY, Dept. W, COLUMBUS, INDIANA

REEVES accurate • positive Speed Control

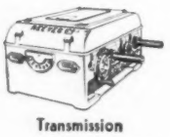
TRANSMISSION provides infinite speed adjustability over wide range.

•

VARI-SPEED MOTOR PULLEY, simple, direct drive from fractional to 15 H.P.; 3:1 range.

•

MOTODRIVE combines motor, speed varying mechanism and (where required) reduction gears.



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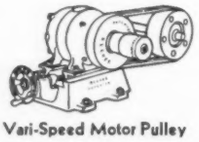
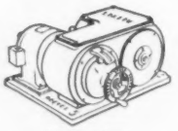


Vari-Speed Motor Pulley



Motodrive

N. A. C. M. Holds a Town Meeting

(*Continued from page 73*)

If you have a cost as low as your competitors you can pick up 10% more business per year which reduces overhead on your produce and is important in your profits. The textile machinery industry, Mr. Tinsley went on, has done much research in alloys to resist wear, in analysis of stresses by photoelasticity, in analysis of motion by high-speed photography, in study of machines with the oscilloscope, and in study of what happens to textiles on these machines. Uniformity of machine parts is greater than ever before, he said, leading to greater standardization and interchangeability. Asked as to further progress in weaving speeds, Mr. Tinsley replied that they were constantly working in that direction, and that every time shuttle speed was increased by 10 picks a minute, about 10,000 looms were made obsolete.

Gustavus J. Esselen listed the fibers in use 20 years from now. He forecast silk as then limited to special purposes and wool probably used in less poundage than now. He saw cotton as holding its importance because of its relative cheapness and its useful characteristics. Nylon, he believed, will be relatively expensive for the next ten years but useful in mixed fabrics. Vinyon he saw as increasing in use because of its thermoplastic characteristic. He also forecast gains in ethyl-cellulose, synthetic "wool," glass fiber, etc. New finishes he explained as valuable to continued used of cotton. Among improved operation or short cuts he foresaw better bleaching with no loss of strength, simplified kier boiling by use of enzymes, development of "synthetic" or extruded fabrics. Asked how much a company should spend on research, Mr. Esselen said that many successful concerns spend 2% of gross sales, one spent over 14% and even a moderate-size firm should undertake some research.

W. O. Jelleme took a look into the future of "The Consumer Movement" which has been fostered by women's clubs and home economics courses. The graduates of that study now form a large group of women who analyze what they are buying. He listed five ends toward which groups are already working: (1) Adequate Standards; (2) Informative Labels; (3) Uniform Terminology; (4) Truth in Advertising; (5) Informative Salesmanship. He boiled down to three things what the consumer really wants to know: (1) What is it made of? (2) What will it do? (3) How should it be cared for? Mr. Jelleme asked "Are you willing to give the essential facts about your fabrics in order that the consumer may buy intelligently?" He pointed out that some facts may be interesting but not valuable, that the tags or labels must go through to point of final sale if they are to perform a service.

ANNUAL ELECTION OF OFFICERS resulted in the reelection not only of President Fisher, but also of the two vice-presidents, Charles F. Broughton, treasurer of Wamsutta Mills, and Ralph C. Perkins, treasurer of Pilgrim Mills and Queen City Cotton Co. New directors elected include: Amory Coolidge, Pepperell Mfg. Co.; Percival S. Howe, Jr., American Thread Co.; Harry S. Newcombe, Berkshire Fine Spinning Associates; Geo. E. Spofford, Androscoggin Mills, Bates Mfg. Co., Edwards Mfg. Co., Hill Mfg. Co., and York Mfg. Co.; Seabury Stanton, Hathaway Mfg. Co.

Again Robbins Maple Gets the Call

100,000 feet of Robbins Maple Flooring in the Weave Room of Swift Manufacturing Company, Columbus, Ga. A. K. Adams, Atlanta, builders.

Swift Adds Another 100,000 Feet

Swift Manufacturing Company pays tribute to the performance of nearly a million feet of Northern Hard Maple by adding 100,000 feet in its Weave Room.

This carries a suggestion to you: *See Robbins before you build or remodel.* You benefit many ways.

Location of two modern mills in the heart of the Wisconsin and Michigan northern forests assures Robbins customers always of slow-growth *Northern* Hard Maple . . . Maple at its toughest best.

Modern equipment in Robbins mills assures accurate milling and scientific seasoning. Each strip benefits from 60 years of flooring manufacturing experience.

Note the special features (and special floorings) listed at the right. Then, see Robbins, get Robbins suggestions, before you build or remodel.

ASK ABOUT ROBBINS SPECIAL FEATURES:

Robbins Nail Grooves—eliminate need for setting nails—increase laying speed.

Robbins Beveled Bottom Edges—speed up laying—easy on workman's hands. Won't scuff building paper.

Robbins Narrow Channel Back—provides 3 bearing points with sub-floor or sleepers.

AND ROBBINS SPECIAL FLOORINGS:

Ironbound Continuous Strip Maple, laid direct on concrete in mastic—preferred for sanitary construction, longer wear, and speedy movement of traffic. Available in Edge Grain, Flat Grain.

Ironbound Unit Blocks in Maple, Beech, Birch and Oak.

Robbins Jointed (or Square Edge) Flooring—for easier replacement in industrial floors.

Robbins Treated Hard Maple Flooring—for termite and moisture control.

Special thicknesses, widths, special matchings and patterns—whatever your need, Robbins can supply it.

For remarkably low, long-range maintenance cost, the Tennant System of Maintenance, as developed by the G. H. Tennant Company, Minneapolis, Minnesota, is highly recommended.

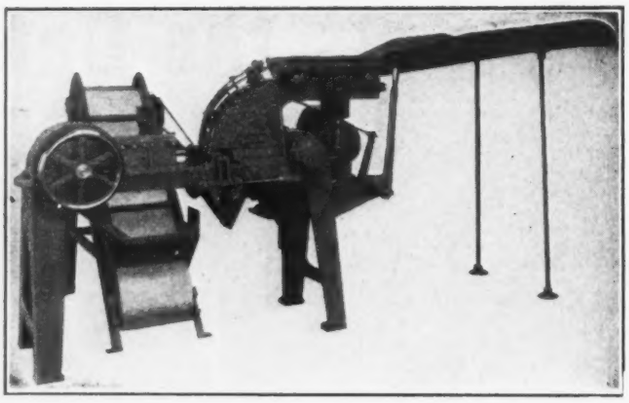
Write us or our representatives. In the Southeast, Bright Brooks Lumber Co., Savannah, Ga. Charlotte, N. C., Atlanta, Ga. In Philadelphia, Geo. Lippincott, 1512 Walnut St. In New York and New England, T. M. Ralston, 5634 Grand Central Terminal, New York City.

ROBBINS FLOORING COMPANY

General Offices, Rhinelander, Wis.—Mills at Rhinelander, Wis. and Newberry, Mich.

Member of Maple Flooring Manufacturers Association

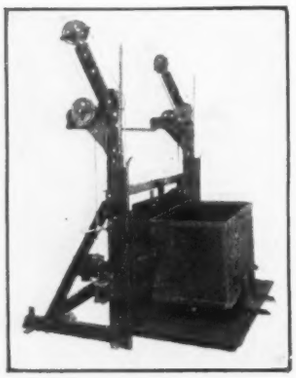
MILLIONS WALK DAILY ON ROBBINS FLOORING



Today's Production
DEMANDS
Over-all Efficiency

Yesterday's methods fall short of today's requirements—successful, economical operation depends largely on over-all efficiency.

Obsolete or inadequately equipped bobbin cleaning departments are not only inefficient, but harbor many small items of expense that are completely eliminated when the New, Improved Type K Bobbin Strippers are installed. They clean twice as many bobbins as previous models — are equipped with safety devices to prevent damage to bobbin barrels or the finish, and give you direct control over filling waste.



★

The Automatic Bobbin Box Hoist at the left, when used with the conveyor elevator, completely eliminates all manual handling except the actual feeding of the machines—thus providing mills with a complete bobbin-cleaning system, unequalled for over-all efficiency and economy.

★

The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

Luther Pilling, Danielson, Conn. — N. E. & Canada
E. W. S. Jasper, Elizabeth, N. J. — Penn. & N. J.
Geo. Thomas & Co., Ltd. — Manchester, England

NEWS ABOUT MEN

K. P. Lewis was recently tendered a testimonial dinner at the Hope Valley Country Club, Durham, N. C. in celebration of his 40th anniversary with the Erwin Cotton Mills. Starting as a clerk in 1900, he later became purchasing agent and general assistant to W. A. Erwin, then president of the company. He was made secretary and treasurer in 1927, and in 1932, on the death of Mr. Erwin, he became president and treasurer. He has served a term as president of the American Cotton Manufacturers Association and as the chief executive of the North Carolina Cotton Manufacturers Association. He is also president of the Erwin Yarn Co. of Philadelphia, and an officer of a number of banks.

K. P. LEWIS

Lord Barnby, British wool authority with interests in that field running from the raw material to finish garments, arrived in this country from abroad early in October. He is already well known in American textile circles as F. Vernon Willey, who was controller of wool supply for Great Britain during the last war. It is understood that outside of any official mission, he is interested in merchandising the clothing products of S. Simpson, Ltd., of London, in this country.

John A. Spooner, advertising manager, American Viscose Corp., New York will take part in one of the sales promotion clinics at the advertising Club, New York. He is scheduled to discuss "Promoting an 'In-Built' Textile Product" on Feb. 24, 1941.

Sol Freeman of Brownie Knitting Mills, New York, was elected president of the Eastern District Knitted Outerwear Manufacturers Association recently. **Robert Seckler,** of Shepard Knitwear, Inc., was chosen treasurer.

W. E. Walter, formerly a district representative for Hyde Rakestraw Co., Philadelphia, at Reading, Pa., has established his own office there for the sale of yarn.

Thomas Jefferson Wallner, president of the Virginia Maid Hosiery Mills, Wallner Silk Hosiery Mills, Carroll Silk Hosiery Mills and Acme Hosiery Dye Works, Pulaski, Va., was guest of honor at a dinner given by his employees in celebration of his 50th birthday last month. **Garrett Garnett Moore,** president of the Employees Association presided, and among the guests were city officials, officials of affiliated companies and representatives of local industry.

W. P. Hazelwood was recently elected president of the Klumac Mills, Inc., of Salisbury, N. C., which plan to resume operations at an early date. **Homer V. Weaver** was named secretary.

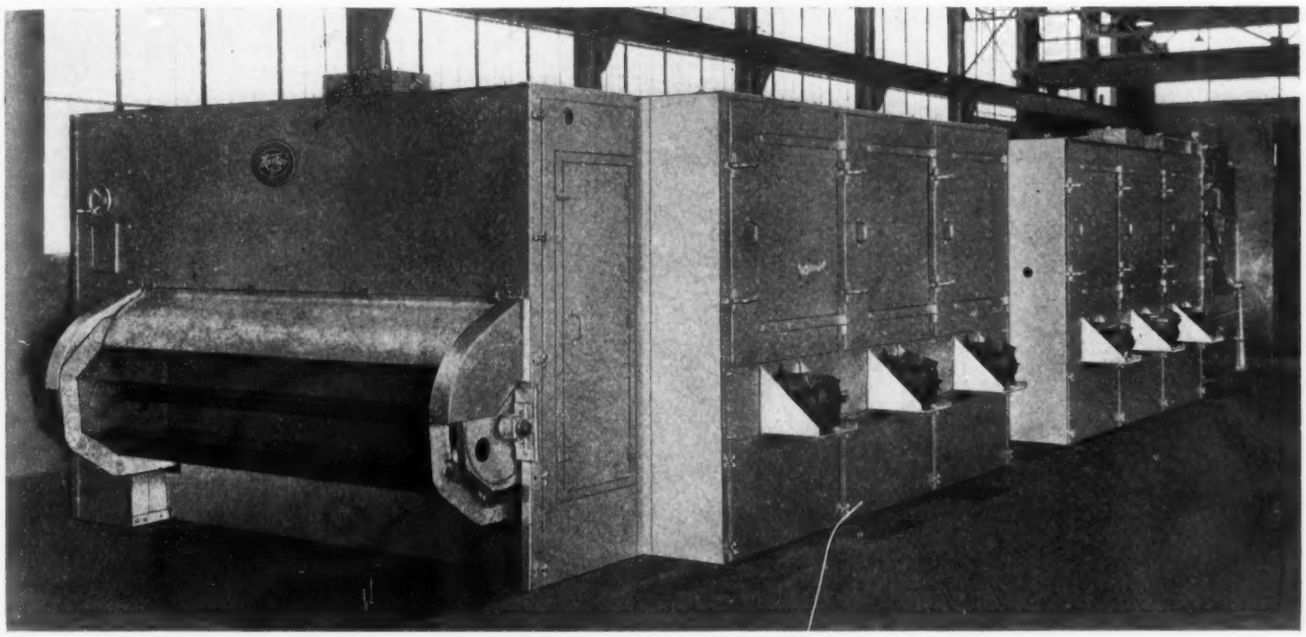
T. Fred Bell has resigned as secretary and treasurer of the Victoria Cotton Mills, Rock Hill, S. C., and is succeeded by **John Roddey,** who has been connected with the mill for some time. Mr. Bell has been associated with the mill for 25 years. His future plans have not been announced.

C. M. Griffin has purchased the interests of E. J. Williams in Golden City Hosiery Mills, Villa Rica, Ga., and will continue the business as sole owner. Messrs. Griffin and Williams organized the mill in 1929.

R. T. LeGrand, Jr. has been elected secretary and assistant treasurer of Shelby (N. C.) Cotton Mills.

John A. Sand, Chicago, president of the Knitted Outerwear Manufacturers' Association, Western District, has named **Samuel Straus,** Straus Knitting Mills, St. Paul, to succeed **I. B. Davies,** Bradley Knitting Co., Delavan, Wis., as a director to the National Knitted Outerwear Board from the Western District. **Ed. Kemper,** Kemper Knitting Mills Co., Chicago, was named as an alternate director to fill the vacancy resulting from Mr. Straus' advancement from alternate to director. Mr. Davies continues as the western district's representative, with **Kenneth Newberger,** Royal Knitting Mills, Chicago, on the Committee on Industrial Mobilization of the National Knitted Outerwear Association.

HOW TO DRY RAW STOCK



UNIFORMLY AND AT LOW COST FOR STEAM, POWER AND LABOR

Pictured above is the latest Hunter Stock Drying Unit. It is unlike any other available Stock Dryer.

It is duplex because it has fans on *both* sides. Equally important, it affords a means of turning over your material within the Dryer completely by unique air streams. Thus, you gain not only high production, but uniform drying.

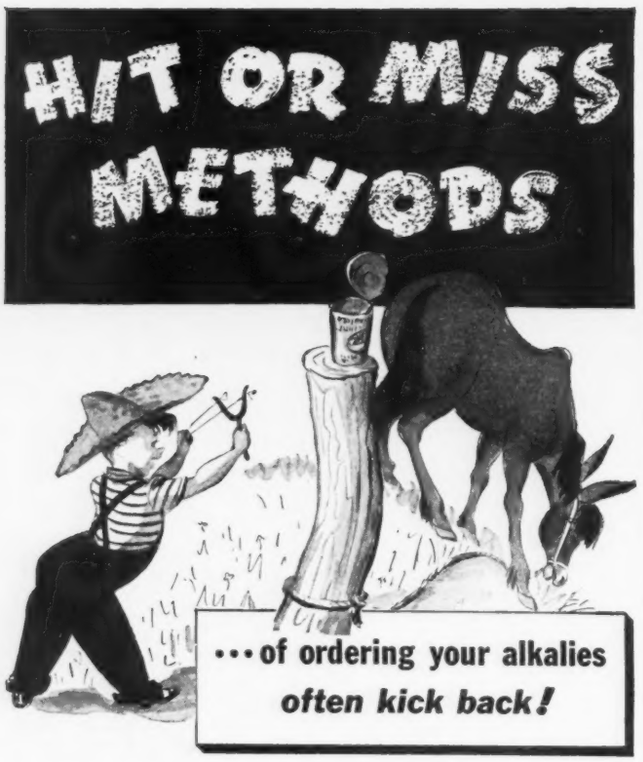
Every fan is direct connected to its own motor; there are no belts or pulleys. Extended surface heaters are used throughout, and all heaters are screened against flying lint. It is equipped with special steel plate apron with automatic lubrication. It is complete with traveling wool guards and baffles that accurately direct the air streams. There is a size for every requirement. For complete details and actual installation data, write to

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

Western Representative
E. G. PAULES
343 Bendix Building
Los Angeles, California

JAMES HUNTER MACHINE COMPANY

SINCE 1847 NORTH ADAMS, MASSACHUSETTS



• • • and kick back by influencing either the quality or the cost of your textile products.

When you use Solvay Alkalies, you can depend on their high quality . . . depend on their constant uniformity at all times. Here are a few other dependable points to consider before you place your order for alkalies:

THE RIGHT TYPE OF PRODUCT FOR THE JOB Solvay Alkalies are made in various forms to meet specific manufacturing requirements. The Solvay Products Book will give you complete information on types and strengths of Solvay products.

UNIFORM QUALITY . . . Only most modern and scientific manufacturing methods are used in making Solvay products—assuring uniform quality standards in Solvay products *every time you receive them.*

MODERN DISTRIBUTING FACILITIES . . . Three of America's largest alkali plants, located in important industrial centers and over 100 stock points assure prompt delivery and efficient routing of your orders for Solvay Alkalies.

YOUR PROBLEMS CONCERNING THE USE OF ALKALIES ARE SOLVAY'S . . . Solvay Technical and Engineering Service Division will help you get the most from your alkalies. Write to

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Please send me a copy of the Solvay Products Book which will give me complete information on all Solvay Products.

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NEWS ABOUT MEN

Capt. Ellison A. Smyth, of Balfour Mills, Flat Rock, N. C., and dean of southern textile manufacturers, celebrated his 93rd birthday on Oct. 26.

Eben Jackson, Cromwell, Conn., secretary of the J. & E. Stevens Co., has been elected president of the Middlesex County Manufacturers Association. He succeeds **Frank Hall** of Middletown, who was formerly connected with the Rockfall Woolen Co.

Frederick G. Brown was elected president of the Apponaug Co. at a meeting of directors in Providence, R. I., Oct. 17. Mr. Brown succeeds **Edwin C. Greene,** who was elected secretary. **Edwin Farnsworth** was named vice-president and general manager. **F. V. Willard** is treasurer.

Don E. Scott, manufacturer of silk hosiery at Graham, N. C., is now general in command of the 60th Infantry Brigade at Fort Jackson, near Columbia, S. C. He had been promoted some years ago to the rank of brigadier-general in the North Carolina National Guard. He was a captain in the first World War, and was decorated for bravery by the French Government.

R. O. Arnold, Covington, Ga., is now acting president and treasurer of the Mallison Braided Cord Co., Athens, Ga., suceeding the late L. F. Edwards.

R. P. Dicks, president and treasurer of Rhodes-Rhyne Mfg. Co., Lincolnton, N. C., has resigned and **Paul Rhodes** has been elected president and treasurer of the company to succeed him.

W. P. Hazelwood has been elected president and treasurer of the Klumac Cotton Mills, Salisbury, N. C., and **Homer V. Weaver,** chosen secretary and assistant treasurer and local manager.

B. B. Gossett, Charlotte, N. C., president of Gossett Mills, has been appointed chairman of the observation in North Carolina of Navy Day. Mr. Gossett was graduated from the United States Naval Academy.

J. Frank Wilson, for the last 21 years general manager of the Marshall Field & Co. plant in Fieldale, Va., has been promoted to the position of general production manager with headquarters in Spray. Mr. Wilson assumed his duties this month when **Luther H. Hodges,** general manager of Marshall Field & Co.'s manufacturing division moved his office from Spray to New York in order to devote his full time to the direction of sales. Mr. Wilson has been with the organization since 1910 starting as an office man at the plant in Draper. **H. W. Whitcomb** has become assistant production manager. **J. H. Ripple,** formerly superintendent of the towel mill at Fieldale, has been promoted to manager of that mill and **E. H. Goode,** superintendent of the hosiery mill at Fieldale, has also been promoted to the managership.

J. FRANK WILSON

E. Walter Maebert has succeeded **Morris Magnier** as manager of Blue Ridge (Ga.) plant of Van Raalte Co.

H. G. Hoch has resigned as treasurer and manager of the Biltmore Hosiery Co., Naples, N. C.

George Farrell is manager of the newly-established Terra Alta (W. Va.) Hosiery Mill.

C. A. Beckwith has become superintendent of the new Continental Hosiery Co., Henderson, N. C.

Col. Robert Persons, owner of Forsyth (Ga.) Cotton Mills, was a recent visitor to the White House where he presented President Roosevelt with one of his famous country hams from his farm in Bleckley County, Ga.

Scott Russell, of Bibb Mfg. Co., Macon, Ga., heads a special committee to confer with TVA officials to ascertain the terms under which the Authority's electric power could be obtained by cotton mills in Georgia. It will serve as a sub-committee of the Electric Power Rate Committee of the Cotton Manufacturers' Association of Georgia.

George W. Hall, Jr., and **Donald Hutton,** both charter members of the Hickory (N. C.) Dyeing & Winding Co., have sold their interest in the company to **H. Grady Miller,** also of Hickory, and **Cecil Jerkins** of Lynchburg, Va.

George H. Cornelson has resigned as vice-president and

Pawtucket Rings *with* Vitritex finish

Pawtucket Rings are made by an exclusive process. The Vitritex Finish is of glass-like smoothness, highly-resistant to tarnish and almost impervious to wear. Even when newly installed, production can be started at normal speed, for no customary "breaking-in" period is necessary.

A trial installation, even on one frame, will show you why Pawtucket Rings give your travelers a "turn for the better" —reduce replacement costs and improve quality.

PAWTUCKET SPINNING RING CO.
(Subsidiary of Saco-Lowell Shops)
CENTRAL FALLS, RHODE ISLAND

CUT OUT AND KEEP THIS INFORMATION FOR PERMANENT REFERENCE

This is number 5 of a series. Here you will find practical information of interest to users of rings

Although the character of the ring surface has an important effect on the operation of the spinning frame, there are other factors equally important: Namely, the diameter of the bobbin used with a given ring and the material, weight and design of the traveler. One can readily see that no matter how smooth the surface of the ring or how carefully the traveler has been selected, if the strain on the yarns causes frequent and excessive breakage the operating efficiency of the spinning room is quickly and seriously affected.

To avoid excessive yarn strain and resulting breakage it is important that the angle of yarn pull (Fig. 1, — C-2) be not less than 21° for yarns with high twist. Other factors being the same, the lower the twist the greater the need for a larger angle of yarn pull. How to quickly calculate the angle of yarn pull is explained in Fig. 1. In Fig. 2 is shown the calculated diameters of bobbins which with a given size of ring will result in angles of yarn pull ranging from 21° to 27°.

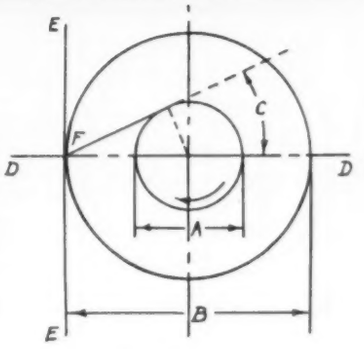


FIG. 1

Draw two concentric circles, one representing the ring diameter (B) and one the bobbin diameter (A). Draw a straight line (D) through the center of the circles and a line (E) at right angles to this line and tangent to the circle; line (F) drawn from the point of intersection of the two straight lines tangent to the circle representing the bobbin diameter indicates the yarn passing from traveler to bobbin. The angle (C) or angle of yarn pull can easily be measured with a protractor.

A method for calculating this angle quickly is based on the trigonometric relation existing between the diameter of the bobbin and that of the ring. By dividing the diameter of the bobbin by the diameter of the ring, the sine of the angle of pull is obtained. Referring to a table of trigonometric functions, the angle of pull can be quickly determined. For example, assume that the bobbin diameter is .875", ring diameter 1.75", then .875"/1.75" equals .50. The angle whose sine is .50 is 30 degrees.

(Fig. 2) Table showing practical ranges of bobbin diameters in inches . . . for different ring sizes

Size of Ring	Angle C 21°	Angle C 23°	Angle C 27°	Size of Ring	Angle C 21°	Angle C 23°	Angle C 27°
1⅛"	.403	.440	.511	2	.717	.781	.908
1¼"	.448	.488	.567	2⅛"	.762	.830	.965
1⅜"	.493	.537	.624	2¼"	.806	.879	1.021
1½"	.537	.586	.681	2⅜"	.851	.927	1.078
1⅝"	.582	.635	.737	2½"	.896	.977	1.135
1¾"	.627	.684	.794	2¾"	.986	1.074	1.248
1⅞"	.672n	.732	.851	3	1.075	1.172	1.362

Houghton has a conditioning oil purposely built for it.

For shoddies, for fine woolens, for the best worsteds — we supply processing oils which have set new standards of stability, uniformity and performance. They're priced right. They're made from 100% domestic materials, insuring them against price fluctuation when world markets are upset. You'll find these conditioning oils of real help in meeting delivery dates and specifications under the National Defense program. Ask the Houghton Man for details and recommendations for your particular job.

●

E. F. HOUGHTON & CO.

3rd & Somerset Streets, Philadelphia, Pa.
1301-05 W. Morehead Street, Charlotte, N. C.

1865 1940 75 years — The HOUGHTON LINE

NEWS ABOUT MEN

assistant treasurer of Spartan Mills, Spartanburg, S. C., and become associated with Lydia Cotton Mills, Clinton, S. C. He was formerly associated with these mills with his uncle, the late C. M. Bailey.

Martin Sandler, vice-president of Clifton Yarn Mills, Inc., Clifton Heights, Pa., has resigned his position with the company, and sold his stock interest. Mr. Sandler expects to continue in the silk thread industry, but at present is on a two months vacation trip.

W. Edmond Pendleton, Jr., has become production manager of Bibb Mfg. Co., Columbus, Ga. He was formerly associated with the audit department of the same company at Macon, Ga.

Ira S. Pitts, Jr., is now an instructor in the weaving and designing department at Clemson (S. C.) Textile School, Clemson, S. C., succeeding **Gordon B. M. Walker,** now assistant editor of TEXTILE WORLD. Mr. Pitts was graduated at Clemson in 1929 and has spent three years with Draper Corp., Hopedale, Mass.; four years with Muscogee Mfg. Co., Columbus, Ga., as second hand, assistant overseer, and night overseer of weaving; two years with Martel Mills, Asheville, N. C., as overseer of weaving; and nine months with Southern Brighton Mill, Shannon, Ga., as assistant superintendent.

Richard O. Barry of New Bedford, Mass., has been appointed assistant instructor in chemistry, dyeing and finishing at the New Bedford Textile School. Mr. Barry formerly was with the Apponaug (R. I.) Finishing Co.

George M. Allen, assistant general plant manager and **H. O. Davidson,** chief engineer, of American Viscose Corp., New York, have been elected to the board of directors of that corporation. Both men joined the company in 1924.

Harold G. Vick and **Herbert L. Wayde,** lately of Charles Chipman's Sons Co., New York, have formed the firm of Vick & Wayde to act as selling agents for hosiery mills.

Joseph F. Lord, Jr., for many years with Charles J. Webb & Sons Co., Philadelphia, is now associated with Collins & Bohr, wool brokers, Philadelphia.

Henry Schniewind, 3rd, has resigned from William Whitman & Co., New York, where he was associated with the rayon greige goods department.

Eugene Lutz, of the Rayon Division of J. P. Stevens & Co., New York, has been advanced to the position of technical liaison man between that division and the company's rayon mills. His work will be entirely of a technical nature and will include both filament and spun rayon.

Harry Riemer, dry goods editor of *Daily News Record,* who was guest of honor at a dinner at Hotel Astor, New York, Oct. 22. The dinner was sponsored by the Textile Square Club, of which Harry is the perennial president, and was attended by 700 representatives of the textile trade both of New York and from out of town as well.

William L. Dillmuth, recently with Pacific Mills, has joined Stehli & Co., New York, as sales manager of spun rayon and print department.

Albert H. Schumacher, for the last 14 years with Botany Worsted Mills, Passaic, N. J., has become general manager of the Walther Mfg. Co., Philadelphia. He succeeds **James R. Lister.**

Fred Sykes is the new resident agent for LaPorte-Bachmann Woolen Mills, Inc., LaPorte, Ind.

Lester Cleverdon has joined the rayon and fine goods division of Deering, Milliken & Co., New York.

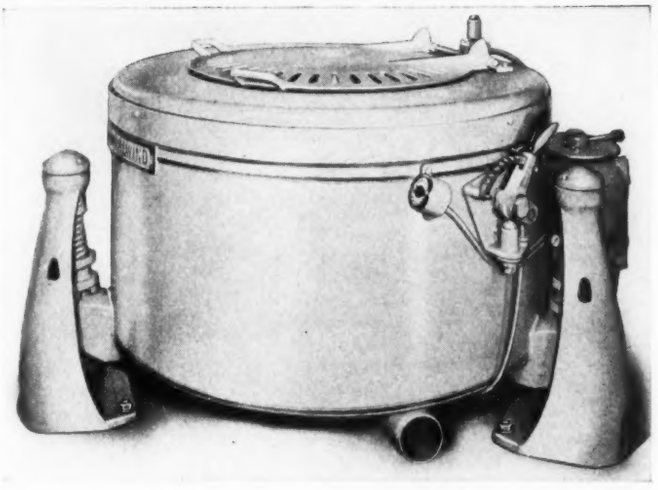
Oscar Goodman of Seneca Textile Corp. is retiring from active business after having been in the cotton goods field for about 15 years. He was tendered a testimonial dinner by his firm last month.

W. M. Melton, general superintendent of Green River Mills, Tuxedo, N. C., has resigned and has become general manager of Pisgah Mills, Brevard, N. C.

Irving Fenner, of Fine Goods Sales Associates, Inc., New York, previously treasurer of the Cotton Piece Goods Salesmen's Association, New York, was elected president of that body last month.

Fred P. Radcliffe, of Wellington Sears Co., New York,

SPEED-UP EXTRACTOR PRODUCTION *with the* FLETCHER *WHIRLWIND* EXTRACTOR



FLETCHER HIGH-SPEED EXTRACTORS REDUCE PRODUCTION TIME UP TO *50%* —SO THAT **1** MACHINE DOES THE WORK OF **2**!

INCREASE your production to meet present emergency demands — but DECREASE your investment in new equipment by installing the High Speed WHIRLWIND — because a single FLETCHER can do the work of two!

Ask about this . . . and the *plus advantages* of easy loading and unloading; big capacity; absolute safety; finger-tip control; stainless steel basket; direct V-belt drive; automatic hydraulic brake; great stability; maximum drainage and compact design that requires less floor space. Write *now* for free bulletins!

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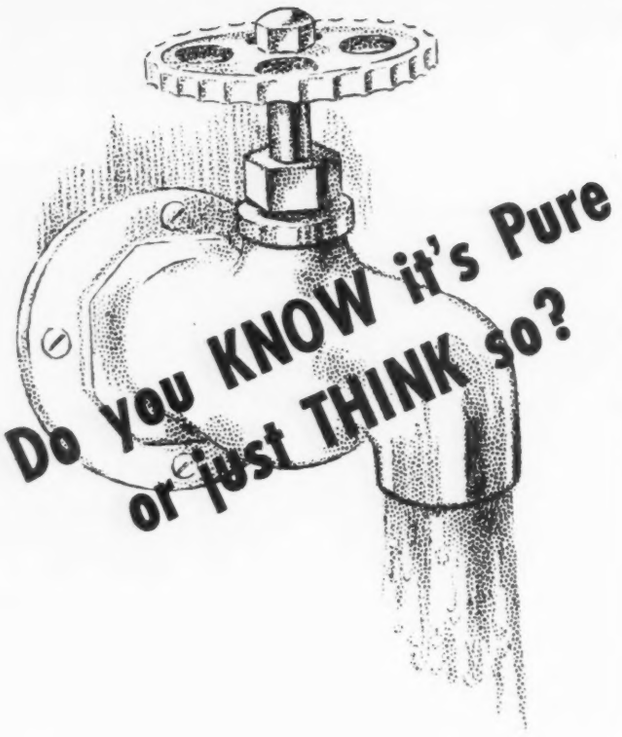
FLETCHER WORKS • GLENWOOD AVENUE AND SECOND STREET • PHILADELPHIA

FORMERLY SCHAUM AND UHLINGER - ESTABLISHED 1850



THERE'S a big difference. Even in a test tube water may look clean, pure and sparkling; but you can't see those minute impurities that make such a big difference in your dye house or finishing plant. . . . It's in those final processes that a few grains of hardness or a fraction too much iron in the water result in off-whites, dull colors, poor dye matching and spoilage.

HUNGERFORD & TERRY WATER PURIFICATION SYSTEMS

relieve you of any doubt by supplying pure, 100% soft, clear, iron-free water at a cost of only a few cents per thousand gallons. . . . Our equipment is not expensive and it carries a binding guarantee as to performance and life. . . . Glad to make a survey of your water conditions without obligation . . .

. . . *WRITE US* . . .

HUNGERFORD & TERRY, INC.

Water Purification Plants Designed
Installed *and* Guaranteed
Clayton, New Jersey

NEWS ABOUT MEN

was guest of honor at a testimonial luncheon given him at the Wool Club, New York, recently on the occasion of the 40th anniversary of his service with that firm.

T. H. Urmston, district sales manager of the New York district of the Acetate Division of E. I. du Pont de Nemours & Co., has become assistant director of sales of that division with headquarters at Wilmington. **L. A. Yerkes, Jr.,** has become district sales manager of that division at New York.

John R. Illingworth has resigned as print sales manager of the United Piece Dye Works, New York. **C. Byron Lear,** manager of printing operations, will act as print sales manager.

F. Lincoln Dunlap, has succeeded the late Leonard Kleeb, Jr., as manager of the Fall River Division of the Pepperell Mfg. Co.

Robert H. Lennox has been appointed manager of the wash goods department of the Riverside & Dan River Cotton Mills, New York. His experience in dry goods dates back to the old house of Claflins, Inc., in 1915.

Thomas P. Knott, for many years identified with finishing and distribution of rayon and silk fabrics, has been appointed to the selling staff of the rayon and fine yarn gray goods department of Deering, Milliken & Co., New York.

Louis Corrigan, sales manager of United Piece Dye Works, New York, has resigned after being associated with that firm for 19 years. He will join the sales organization of J. P. Stevens & Co., New York.

Frank Graham, formerly of Warrick Mills, West Warrick, R. I. is now superintentent of the Fairfax Mills, Pawtucket, R. I.

John M. Caughman has been promoted from overseer to assistant superintendent of Startex Mills, Tucapau, S. C.

Edward J. Gleason has opened an office in Los Angeles, Calif., as a direct mill representative on hosiery, underwear and knitted outerwear. Mr. Gleason was for the last 12 years on the editorial staff of *Underwear & Hosiery Review.*

Chas. D. Green, Clemson textile graduate of 1928, has resigned as treasurer and general manager of Laurens (S. C.) Cotton Mill, to become manager of Mills Mill, Greenville, S. C. and Fairforest Finishing Co., Spartanburg, S. C.

A. E. Massey has resigned as manager of Linen Thread Co., Blue Mountain, Ala., and become head of Exposition Cotton Mills, No. 2, LaFayette, Ga.

W. C. Oxley has relinquished his duties as secretary of Clinton (S. C.) Cotton Mills.

Frank K. Petrea has been appointed general manager of Samoset Cotton Mills, Talladega, Ala., succeeding **John G. Chapman,** resigned. Mr. Petrea has been superintendent and was promoted to his new position.

Miss Nova A. Eisnor, for five years fashion and promotion coordinator of the Mutual Buying Syndicate, has been appointed fashion director of the Cotton-Textile Institute, New York, succeeding Miss

MISS NOVA A. EISNOR

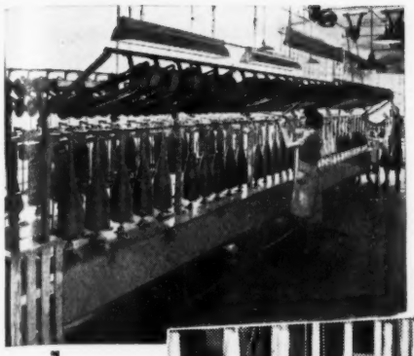
Catherine E. Cleveland who has become chief of sewing projects of the Works Progress Administration. Miss Eisnor's experience in retailing and in the fashion markets would contribute to the further development of the Institute's fashion program with respect to cottons. Among other things, she will have charge of fashion shows and will act as liaison between the mills on the one hand and converters, cutters-up, and retailers on the other. She is a member of the Fashion Group, and has been since 1935 a member of the Color Coordination Committee of the National Retail Dry Goods Association.

Fred M. Allen, who was for eight years an executive of the Southern Combed Yarn Spinners' Association, has assumed his new duties as secretary-manager of the Lake City (Fla.) and Columbia County Chamber of Commerce.

R. S. Bush, recently with Iselin-Jefferson Co., has joined the New York organization of Callaway Mills as assistant to **Arthur Neill** in the new towel department.

Robert Frick, after an association of 21 years with

Mobilize Your Production
with these
FIDELITY MACHINES

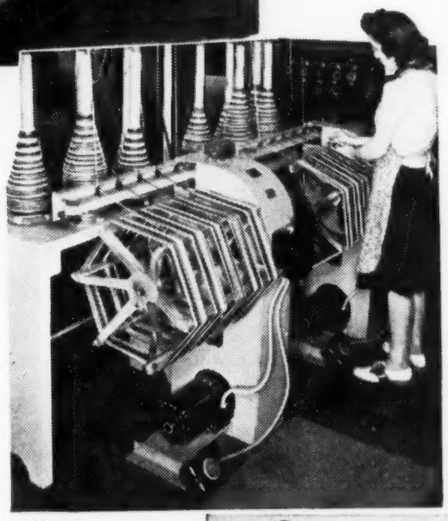


1

WHEN every second saved counts toward defense, here are five machines that save minutes, hours and material to make *more* and *faster*.

1 - FIDELITY JUMBO Bobbin Winders

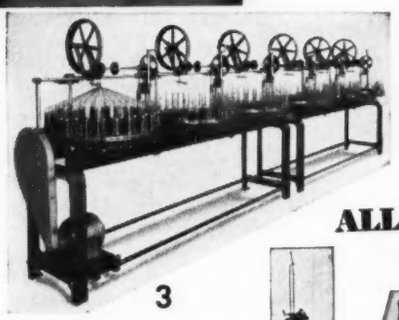
Five times as much yarn wound on a single bobbin—smoothly, quickly and evenly—means fewer changes, fewer tied ends, less threading of guides in reeling, less stopping and starting, fewer interruptions, fewer seconds, more production—much more. That's something worth writing or wiring about.



2

2 - FIDELITY Twin-Unit System

of skein reeling, speeds output—30 to 50 seconds doffing and clipping cycle; lightens work for operator —no high lifting; controls skein weight and yardage automatically and accurately; saves floor space—up to 50%; flexible for yarn changes, adjustable for skein weight. Write for new Bulletin.

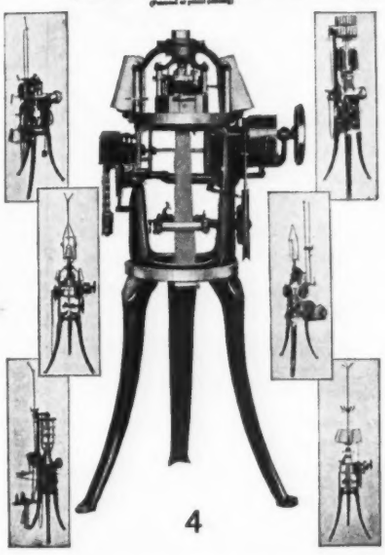


3

3 - FIDELITY Multiple-Head Braiders

for flat, round, rick-rack or tubular braids. A range of 24 different basic types in 57 regular models and sizes, give top production with minimum attention and low power consumption. Send samples of your braids and production needs when you write for information.

ALL TRUE-RIB FIDELITY RIBBERS



4

4-These and other FIDELITY Universal Ribbers and Circular Knitting Machines in a number of models, available with welt, selvedge welt, loose course, dogless, two-speed drive, five-color yarn changer and knot-tyer. plaiting attachment, elastic laying-in attachment and stop-motion.

5 - FIDELITY Backwinders

You can war on waste by recovering and salvaging silk and Nylon from your press-offs from three-carrier leggers. Made in units of 3, 6, 9, 12 and 18 spindles. Recover from 12 oz. to 6¾ lbs. per 8-hour shift, depending on number of spindles and weight of hose.

5

OTHER FIDELITY MACHINES

Braiders
Backwinders
Circular Knitting Machines
Cylinders and Dials
5-Color Yarn Selector & Knot Tyer
Fringe & Tassel Machines
Giant Package Winders
Rosshel Machines
Ribbers
Wire Covering Machines
Belt Loop Cutters
Packet Folding Machines
Special Machines Designed and built

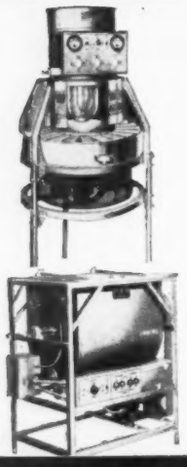
FIDELITY MACHINE COMPANY
3909-19 Frankford Ave., Philadelphia, Pa.

A DYE MAY COST LESS AND STILL BE BETTER

IF YOU KNOW IT'S COLOR FAST

Thousands of dollars are saved annually by plants making and depending on Fade-Ometer and Launder-Ometer tests in their own laboratories.

These tests meet the requirements of Federal, Bureau of Standards, A.A.T.C.C. and A.S.T.M. specifications for fastness to light and washing.

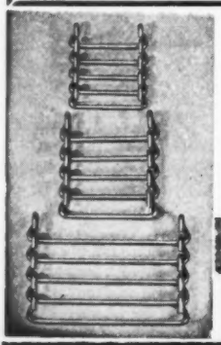


ATLAS ELECTRIC DEVICES CO.
371 W. Superior St., Chicago

Write for Separate Illustrated Catalogs

FADE-OMETER *Accelerated Sunlight*
LAUNDER-OMETER *Accelerated Washing*

OPPORTUNITIES
TO IMPROVE YOUR PRODUCT
AND SAVE YOUR MONEY . . .



NARROWING CHAIN

Accurately made from high grade material—built to last and to hold its shape.

SINKER HEAD SLOT CUTTERS

The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

Send for bulletin giving full details on these and other products.

THE SINKER WITH THE HARDENED THROAT PATENTED AND THE HARD BUTT

GIVES YOU..

LESS BREAKAGE
LONGER SERVICE
LOWER OPERATING COST
LONGER UNIFORMITY OF PRODUCT

THOMAS & SKINNER
STEEL PRODUCTS COMPANY
1119 East 23rd Street Indianapolis, Indiana

NEWS ABOUT MEN

Stehli & Co., has resigned from that firm to join J. P. Stevens & Co., New York, where he will style filament rayon fabrics. In this capacity he succeeds **Eugene Lutz,** who is now technical liaison man between the rayon division and the mills.

Joseph George Levy, associated for the last three years with Botany Worsted Mills, has returned to the Walther Mfg. Co. with which he had been previously associated for 17 years. He will be sales manager and stylist.

Miss Jessica West has resigned as fashion director for Julius Kayser & Co., New York.

Edward L. Murphy, Jr., who recently resigned as instructor of chemistry at New Bedford (Mass.) Textile School was recently guest of honor at a dinner given on behalf of the faculty of that school. Mr. Murphy has joined the staff of Brown-Durrell Co.

Cleveland Waller has resigned from William Whitman Co., New York, where he was stylist for Arlington Fabrics for the last nine years.

Robert L. Weingarten, lately with the brokerage firm of Weingarten & Co., New York, has become associated with the lingerie division of Belding Heminway Corticelli Co., New York.

Thomas H. Hagan, formerly agent of Amoskeag Fabrics, Inc., Manchester, N. H., is now in charge of the mill efficiency department of A. M. Pullen & Co., accountants, Greensboro, N. C.

David Stiles, formerly night superintendent at S. Stroock & Co., Newburgh, N. Y., has become assistant superintendent of Swift River Woolen Co., Stafford, Conn.

Herbert C. Hess has been appointed general manager of Crystal Springs Finishing Co., Assonet, Mass. He succeeds **Adolph Guilmette.**

George W. Whitney has resigned as resident manager of the Champlain Mills of American Woolen Co., Winooski, Vt., and will retire from business. Mr. Whitney has served continuously as resident manager of the same mill for about 40 years. He was the owner of the mill when it was purchased by the late William M. Wood for the American Woolen Co.

A. O. True, chemical engineer of the Proximity Mfg. Co., Greensboro, N. C., was made president of the North Carolina division of the American Waterworks Association at its 20th annual convention in Raleigh, N. C., Oct. 28 to 30.

J. H. Fagan has been recently made superintendent at Cleghorn plant of Spindale Mills, Rutherfordton, N. C.

J. H. Robbins has been promoted to assistant superintendent of Gaffney (S. C.) Mfg. Co. Mr. Robbins re-

DEAN OF COLLINS & AIKMAN EMPLOYEES: Fred Garvin (left), a machinist in the Bristol, R. I., plant of Collins & Aikman Corp., and employed by the company for 53 years, is pictured receiving congratulations from W. G. McCullough, president of the corporation, at the recent annual convention of the C. & A. Quarter Century Club including those with 25 or more years of service. Henry Peterson, previous dean of employees, retired last year with a service record of 62 years.

Presenting

AMYLEX

—the Original

SLOW-CONGEALING STARCH PRODUCT

Made Expressly for Warp Sizing!

- The slow-congealing feature produces strong, smooth-surfaced warps, and eliminates crusting or lumping.

- Fats are either eliminated or greatly reduced—thus preventing flaking, excessive shedding, and loom breaks. Likewise, tensile strength is increased.

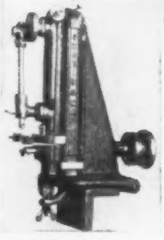
- Brighter, stronger colors are obtainable on dyed warps—owing to the transparency and uniform penetrating properties.

AMYLEX, being a thin-cooking starch, has the proper penetration, yet coats the fibres like an expensive gelatin or potato starch size. It is a pure form of modified starch, containing no chemicals nor fats, and is commercially uniform at all times. Its price is only 60¢ per cwt. over Pearl Corn Starch—the same as standard thin boiling starches.

Write us the amount you need for a trial. We will gladly send it on approval.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK



Greater Production with the NEW C & M Tacking Machine

These important new improvements contribute maximum efficiency at higher speed with greater ease of operation:

- Streamline ONB Head (design patent 122001) with improved cloth guide and oscillating needle bar.
- Counter balanced clutch case and roller chain drive for smoother running.
- Stronger and higher folding arms with improved folder swings for better and higher piling.

The new type ONB Head enables operator to run goods much faster and at the same time more easily. Sturdier construction with adjustment in one place only. Length of stitch may be changed by merely changing size of driving pulley.

May we send you complete information?

—CURTIS & MARBLE—
MACHINE COMPANY

WORCESTER, MASSACHUSETTS
Branch Offices: NEW YORK, PHILA., GREENVILLE, S. C.

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ARLINGTON MILLS
LAWRENCE, MASS.

CRAMERTON MILLS
CRAMERTON, N. C.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

NONQUITT MILLS
NEW BEDFORD, MASS.

WILLIAM WHITMAN COMPANY, Inc.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

cently came to the Gaffney plant from Chester, S. C., as overseer of spinning. He was previously overseer of spinning of the No. 1 and No. 2 mills of the Gayle plant of Springs Cotton Mills, Chester.

Joseph A. Porter, Jr., a graduate of North Carolina State College textile school in 1934, who recently taught in the Danville (Va.) Textile School, has been appointed instructor of weaving and designing in the North Carolina State College.

James Walton, Jr. has been named superintendent of Gastonia (N. C.) Full-Fashioned Hosiery Mill. Mr. Walton comes from the Hugh Grey Hosiery Co., Concord, N. C., where he was assistant superintendent.

E. W. Maebert has become manager of Van Raalte Co.'s hosiery mill at Blue Ridge, Ga. He succeeds **Morris Mangier,** resigned.

Stanford McDowell has been made superintendent at O. E. Kearns & Son, hosiery mill, High Point, N. C.

Alvin B. Shepherd has become office manager at Alamac Hosiery Co., Reidsville, N. C.

Obituary

James E. Campbell, 64, president of Chalmers Knitting Co., Amsterdam, N. Y., died Oct. 20. Mr. Campbell had been connected with Chalmers since 1918 and became president in 1937.

Eugene A. Burnham, 73, president of Easton & Burnham Co., and owner of C. A. Luther Co., Pawtucket, R. I., textile machinery manufacturers, died in that city on Oct. 6. His father, Charles C. Burnham, was a partner in the Easton & Burnham firm 100 years ago. About 1890 Mr. Burnham acquired an interest in the Luther company, and later its sole ownership. He was widely known in New England textile centers.

Alfred C. Gross, 56, founder and president of the Gross Fabrics Corp., New York, died Oct. 18.

Walter V. Judkins, 82, for the last 25 years president and treasurer of the Eastern Ribbon Co., Boston, died at his home in Newtonville, Mass., Sept. 29. He entered the dry goods business in Boston in the latter part of the last century and was at one time New England representative of the old dry goods firm of Teft, Weller & Co.

William C. Bitting, 70, chairman of the board and former president of Rosedale Knitting Mills and Liberty Dye Works, Reading, Pa., died Oct. 18. He became president of the Rosedale company in 1914 when it was reorganized. From 1929 to 1938 he was president of the Liberty Dye Works. He also was vice-president of the Karl Lieberknecht Co., since 1927 and a director of the Chipman Spinning Co., Easton, Pa.

John H. Harwood, 71, partner for many years of the textile machinery firm of

JOHN H. HARWOOD

George F. Harwood & Son, Worcester, Mass., died at his home in Brookline, Mass. Oct. 9. He was a graduate of Harvard and Harvard Law School and practiced law in Boston for several years. He retired several years ago as treasurer of Lewandos, dyers and cleaners.

Gus L. Rosenberg, 70, for many years a figure in the wool textile field of New York, died last month. He was selling agent for the firm of John & James Dobson 30 years ago, and after a period abroad, returned to enter the business under his own name.

F. Gilbert Hinsdale, 67, president and treasurer of Clarence Whitman & Sons, Inc., New York, died Oct. 12. He was for many years treasurer of the company, and became president in 1939 succeeding the late C. Morton Whitman.

James C. Williams, 52, president of Williams Bros. Mfg. Co., Rome, N. Y. for many years, died Oct. 19.

George E. Daniels, 80, retired mill owner, died recently in Worcester, Mass. He operated woolen mills in Worcester,

Now— AROOSTOOCRAT

• *Photos Courtesy Maine Development Commission. Brooke, Smith, French & Dorrance, Inc.*

We are producing the

HIGHEST GRADE STARCH

equal to the finest imported

DUTCH STARCH

● **Now textile men who have been buying imported Dutch Potato Starch at a premium because they wanted the highest quality can continue to get the same high grade of starch . . . by ordering AROOSTOOCRAT. Behind AROOSTOOCRAT Starch Quality are:**

1—An unlimited quantity of raw materials in the form of bounteous crops of Maine Potatoes—a crop estimated to be beyond the normal consumption of the United States —and

2—The first plant of its kind in the United States—employing the complete plans and the latest, most modern equipment and processes of European plants, where starch making is not a hit-or-miss method, but an EXACT SCIENCE. All AROOSTOOCRAT Starch, for instance, is washed in ARTESIAN WELL WATER, for absolute purity.

● **The erection and operation of this plant has proved beyond question that with the proper equipment and processes, AROOSTOOCRAT is producing in this country a grade of potato starch equal to the best imported Dutch Starch—in quantity to meet the needs of users of this type of starch.**

Your inquiries are invited as to prices, quantities and deliveries.

Uniform Quality Guaranteed

AROOSTOOK POTATO PRODUCTS, INC.

HOULTON, MAINE

Sales Agent: MORNINGSTAR, NICOL, INC., 630 W. 51st St., *New York City*

When you are ready to consider silicate of soda for scouring, bleaching, soaping off prints or weighting, get in touch with P. Q. Silicate Headquarters for two reasons:

1. Consistently uniform quality silicates of high purity insure first quality goods.

2. Intelligent advisory service based on mill experience, that has kept up-to-date.

If you do not use silicates of soda, let us tell you how you can do so profitably.

MEESE, INC.
Madison, Ind.

NEWS ABOUT MEN

Rutland and Rockville, Conn., before coming to East Brookfield in 1917. At that time he established the Daniels Mfg. Co., which he operated until his retirement about five years ago.

Churchill Hungerford, Sr., 72, chairman of the board of Hungerford & Terry, Inc., Clayton, N. J., died in Philadelphia Oct. 16. He established the firm of Hungerford & Terry in Philadelphia in 1906. The company moved to its present location in Clayton in 1921. He was an inventor and devised numerous systems of valves and filters for continuous water softening. He was also president of the Inversand Co. of Clayton.

Davis H. Pannill, 60, president of Pannill-Walker Underwear Co., Martinsville, Va., died Oct. 31.

John S. Chipman, 41, president of Chipman Knitting Mills and Chipman Spinning Mills, Easton, Pa., and of Chipman, Inc., East Flat Rock, N. C., and treasurer of Rosedale Knitting Co., Reading, Pa., died Oct. 28. He had been president of the Easton plants, founded by his father W. Evan Chipman, for 12 years.

Robert B. Scott, 68, former member of the board of Ferguson Bros., Carlyle, England, and, until his retirement seven years ago, direct representative of that firm in this country and Canada, died Oct. 3 at his home in Bronxville, N. Y.

Henry H. Timken, 72, chairman of the board of Timken Roller Bearing Co., Canton, Ohio, died Oct. 14. His father's carriage works evolved around 1902 into the roller bearing company.

Frederick W. Campbell, 50, technologist for the seven units of Marlboro Mills, McColl, S. C., and Bennettsville, S. C., and for 19 years superintendent of the mills at McColl before taking over his new duties, died recently.

Gladstone Fish, superintendent of the weaving division of the Suncook Mills in Suncook, N. H., died in Manchester, N. H., Oct. 18.

Clifford C. VanBuskirk, manager of the New York bulk sales office of Corn Products Sales Co., died Oct. 5.

William T. Barrett, president of Charles Cooper Co., Inc., Bennington, Vt., died in September.

Ambrose B. Madeira, 56, secretary-treasurer of the Cacoosing Knitting Mills, Sinking Spring, Pa., died Oct. 14.

William F. Hummel, 71, at one time head of the old Hummel Knitting Works, Milwaukee, Wis., died last month.

Marcus Frieder, 80, president of General Textile Mills, Inc., New York, died Oct. 13. He organized the General Silk Corp. which at one time had 6,000 employees.

John C. Hughes, 82, for years a leading merchant in the New York Worth Street district, died Oct. 10. After a successful career as a merchant in Louisville, Ky., he came to New York and with Leavelle McCampbell established a department under the style Hughes-McCampbell Department in the old dry goods firm of Converse & Co. After a dissolution of that department he remained as an executive of Converse & Co. until his retirement.

Charles F. Beckmann, 57, president of Apex Coated Fabrics Co., Inc., New York, died last month.

Marvin Christopher Kirsey, 51, overseer of the card room of Rhyne-Houser Mills, Cherryville, N. C., died Oct. 15.

Frank W. Johnson, 59, manager of Johnson Chemical Co., Charlotte, N. C., died Oct. 19. He had been previously for 18 years southern manager for Arnold-Hoffman Co. He organized the Johnson Chemical Co. in December, 1939.

Jonah Carson Wilson, 54, overseer of weaving at Virginia Cotton Mills, Swepsonville, N. C., died recently.

David Luke Kelly, 57, overseer of carding at Neely Cotton Mills, York, S. C., died recently.

W. Avery Gardner, 59, general overseer of Trenton Cotton Mills, Gastonia, N. C., died Oct. 15.

H. O. Newson, 71, for the last seven years salesman with the Hardwick Woolen Mills, Cleveland, Tenn., died in Fayetteville, Tenn., recently. He has been a woolen salesman since 1910.

R. L. Newson, 69, died at his home in Fayetteville, Tenn., not many days after the death of his brother, H. O. Newson, as noted above. R. L. Newson was also a salesman with Hardwick Woolen Mills, Cleveland, Tenn.

Charles G. St. Clair, 73, for many years manager and treasurer of the H. H. Wood Co., hosiery manufacturers, Laconia, N. H., died Oct. 21. He started as an employee of the late Samuel Hodgson, a pioneer in the United States hosiery industry, and was associated with hosiery manufacture for nearly 50 years.

. . . and STALEY STARCHES
Have "What It Takes"

★ Long experience, modern laboratories, experienced personnel and watchful control are necessary to produce the *right* starch for each specific textile use — and keep it uniformly *right* in GRADE, and *uniformly high* in QUALITY. That's why Staley Starches "have what it takes". Depend upon Staley cooperation and service for your starch needs.

A. E. STALEY MFG. CO.

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The demands for NATIONAL DEFENSE

The introduction of SPUN RAYON and other fibres and blendings

The annual machinery CHECK-UP and your OPERATING METHODS make you face new problems,

AVAIL YOURSELVES OF OUR SERVICE.

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have the experience and organization to assist you in solving them.

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ALFRED SUTER - TEXTILE ENGINEER - 200 FIFTH AVE N.Y.C

TEXTILE MILL NEWS

Cotton Mill News

American Thread Co., Dalton, Ga., has just completed a modern new office building. The same company has sold the No. 4 finishing mill in Holyoke, Mass., to Charles Belsky & Sons.

Aragon Cotton Mills, Rock Hill, S. C., have purchased 400 Draper looms. A 57x130 ft., two-story addition is nearing completion.

Avondale Mills, Sylacauga, Ala., is considering a building program involving revamping present dye house and making an extension. Estimated cost is about $100,000.

Banning (Ga.) Cotton Mills have been purchased by C. L. Upchurch Co., Athens, Ga., from J. W. Powell, referee in bankruptcy, on bid of $42,250, and plant will be dismantled.

Beacon Mfg. Co., Swannanoa, N. C., has work nearing completion on one-story addition to Oconee Mills, Westminster, S. C., totaling about 15,000 sq. ft. of floor space, and will equip as a new weaving unit. Mill heretofore has been used for spinning operations only. Cost reported over $80,000, with looms, etc.

Bibb Mfg. Co., Macon, Ga., has let general contract to Fiske-Carter Construction Co., Spartanburg, S. C., for two-story addition to mill No. 3 at Porterdale, Ga., 47x205 ft., and 50x78 ft., reported to cost over $75,000, with equipment. Lockwood Greene Engineers, Inc., Spartanburg, are engineers.

Callaway Mills, LaGrange, Ga., will erect auditorium and gymnasium building to cost $50,000.

Dalla-Noval Yarn Mill, Dallas, Ga., has completed the installation of three new Foster Winders.

Dominion Textile Co., Ltd., Montreal, Que., has begun erection of addition to mill on St. Ambroise St., for which general contract recently was let to Anglin-Norcross Corp., Ltd. Cost estimated about $100,000, with equipment.

Erlanger Cotton Mills and **Nokomis Cotton Mills,** Lexington, N. C., have merged under the name of Erlanger Mills, Inc. Julian Robertson is president and treasurer; G. S. Hartzog, secretary, and E. P. Cofield, general manager. They have a combined spindleage of 67,440 and a battery of 1,515 looms.

Erwin Cotton Mills Co., West Durham, N. C., has let contract to C. H. Shipp Construction Co., Durham, for completion modernization of offices, including air-conditioning system and other facilities.

Henrietta Mills, Cherokee Falls, S. C., has reopened following the completion of temporary dams to give a supply of water made unavailable by the breaking of the main dam during the flood last August. Permanent repairs are under way.

Henry River (N. C.) Mills have completed an addition which measures 150 x 200 ft., two stories, providing 60,000 sq. ft. of additional floor space.

Johnson & Johnson, New Brunswick, N. J., have awarded general contract to Rule Construction & Repair Co., for new one-story mill, 205 x 230 ft., for production of industrial tape, forming a unit of new plant on Highway 26, near Milltown, N. J. Cost over $150,000, with equipment.

Johnson Cotton Co., Dunn, N. C., recently organized with capital of $100,000, plans operation of a mill in vicinity of Siler City, N. C. N. M. Johnson, Dunn; and N. J. Dark, Siler City, head company.

Kendall Co., Boston, has sold the machinery (excepting the looms) in its discontinued New Bedford, Mass., plant to Crescent Corp., Fall River, for liquidation.

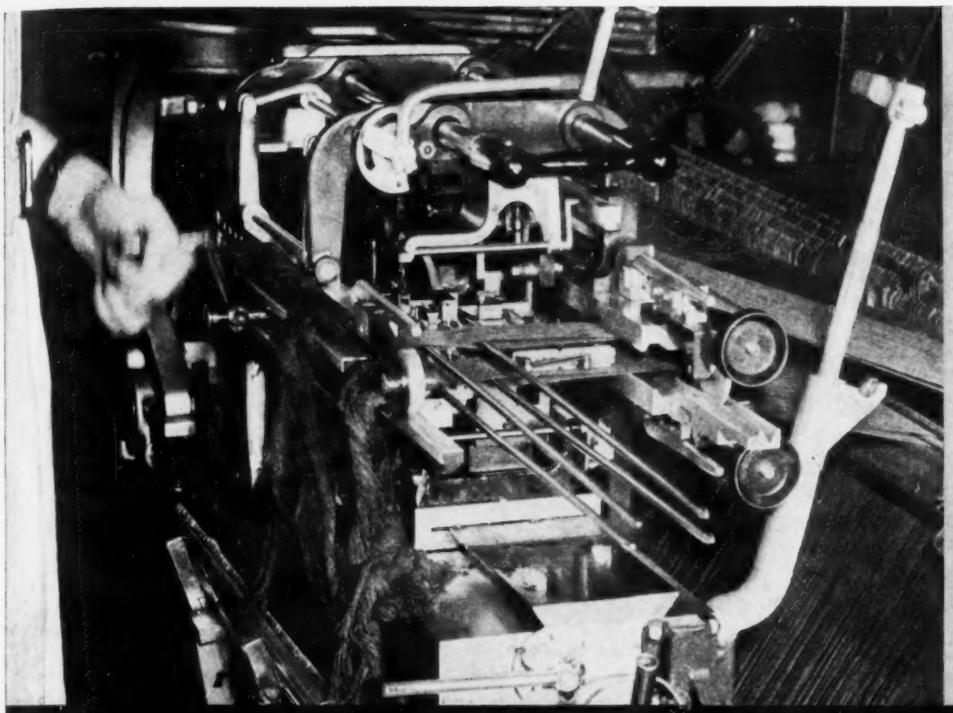
Mauney Mills, Inc., Kings Mountain, N. C., has completed installation of new five-roll drawing frames and lap winders, with accessory equipment, recently purchased from Saco-Lowell Shops.

McElroy Mills, Inc., Fayetteville, N. C., recently chartered with capital of $50,000, plan operation of a cotton mill.

Morgan Mills, Rome, Ga., has begun operations on covered rubber yarns for knitting mills to be used in sock and anklet tops. The mill is owned by Robert A. Morgan, of Moore, Thies & Morgan, Charlotte, N. C. and Rome, Ga. His son, Gray Morgan, will act as superintendent-manager.

Nashua (N. H.) Mfg. Co. will reopen its Lowell, Mass., plant as soon as orders justify it. The plant which once employed 1400, closed several years ago.

J. M. Odell Mfg. Co., Bynum, N. C., has begun construction of new hydroelectric power plant for service at mill,



BARBER-COLMAN

Portable

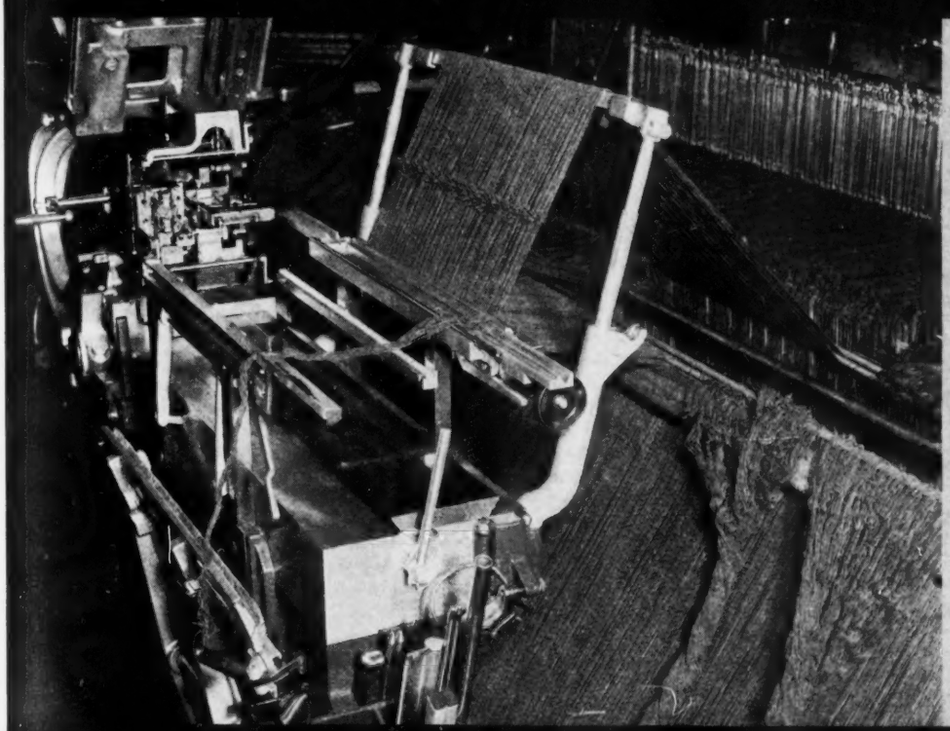
WARP TYING

MACHINE

MODEL "LS"

WOOL WARPS...TIED IN AT THE LOOM

LOW COST WARP REPLENISHMENT - HIGHEST QUALITY RESULTS



The upper picture shows the Model "LS" Warp Tying Machine in action on a "bite", or portion, of a wool warp. In the lower picture, the bite has been completely tied and is about to be cast off. Note the next bites separated, ready to be put in the machine, which is fully portable and operates in the narrow alley directly behind the loom.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

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RIHCO Type B Atomizer

On new installations the ingenious new RIHCO Type B Atomizer has already proved its ability to save one-half the compressor and power costs in numerous mills, *because it uses one-half as much air.*

On old installations it enables you to double your humidification with your present compressed air, with no additional cost for power.

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Aldrich Machine Works Greenwood, S. C.

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THE PRINCIPLE
A. NIP ROLLS
B. PIVOT
C. LEFT HAND SELVAGE
1. Swing of rolls in this direction releases selvage toward position 2.
3. Swing of rolls in this direction pulls selvage toward position 4.
The position of the selvage determines the swing of the rolls.

LOW MAINTENANCE Waterproof, rustproof, purely mechanical. No electric switches or coils to burn out or short circuit. No air valves to clog. Only 2 moving parts. Reversible rubber roll.

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Heads set flush with machine surfaces; no sharp edges to catch fabrics; no slots to burr and pull threads. Strongest, handiest screws to use; hold tight under vibration. Ask for *free samples* — indicate types and sizes wanted.

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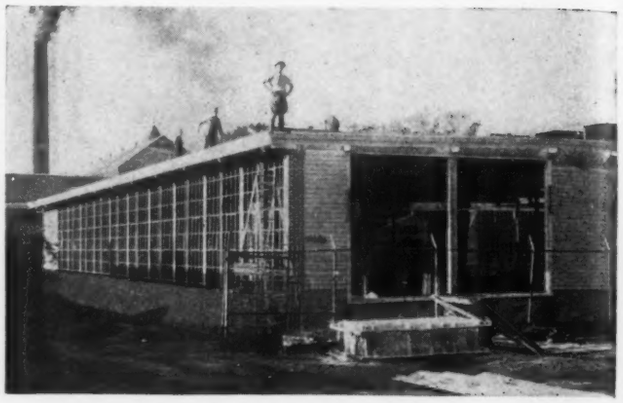


ANNISTON (Ala.) MFG. CO.—Addition to this mill which will provide 15,000 sq.ft. floor space and house 300 looms. Daniels Construction Co. has the contract and J. E. Sirrine & Co. are the engineers. Building will be ready Nov. 15.

to include an hydraulic turbine and electric generator with capacity of about 800-hp., and auxiliary equipment; also, switchboard room and other operating and control facilities.

Oxford (N. C.) **Cotton Mills** is building an addition 60 x 80 ft. and will install new carding equipment.

Pacific Mills - Olympia, Capital City and **Richland** mills of the Hampton division, Pacific Mills Co., Columbia, S. C., resumed operations Oct. 14 after a month's idleness, occasioned by walkout of a small group of doffers in protest against a new work system. Granby mills, of the Hampton division resumed operations on Oct. 7. Workers returned under the same conditions they left at the advice of the Textile Workers Union of America, which asserted the strike was unauthorized.

Ranlo Mfg. Co., Gastonia, N. C., is constructing an addition to its Modena unit.

Rhodes-Rhyne Mill, Lincolnton, N. C., is now owned by Paul Rhodes of Lincolnton, who bid the mill in at auction on behalf of the heirs of the D. P. Rhodes estate. An estimated $100,000 was said to be invloved.

Rhodes-Whitener Yarn Mill, Millersville, N. C., which suffered damage to the amount of $200,000 during a recent western North Carolina flood, has begun to rebuild the mill at its former location.

J. W. Sanders Cotton Mill, Magnolia, Miss., closed since Sept. 1, for installation of new equipment, has reopened under the new name of **Magnolia Textiles, Inc.**

Startex Mills, Tucapau, S. C., have installed modern winding and warping machines in one of the units, and improvements have been made to the slasher room.

Textiles, Inc., Gastonia, N. C., has let general contract to R. H. Pinnix Co., Gastonia, for one-story addition to Arkray Mill. Cost reported about $25,000. Same company has purchased 12 cards, four combers, one slubber, two intermediates, and nine roving frames, which will be installed in an addition, now under construction at the Ridge Mills unit.

West Point (Ga.) **Mfg. Co.** plans one-story addition. Cost reported close to $45,000 with equipment. R. Kennon Perry, Atlanta, Ga., is architect.

Wool Mill News

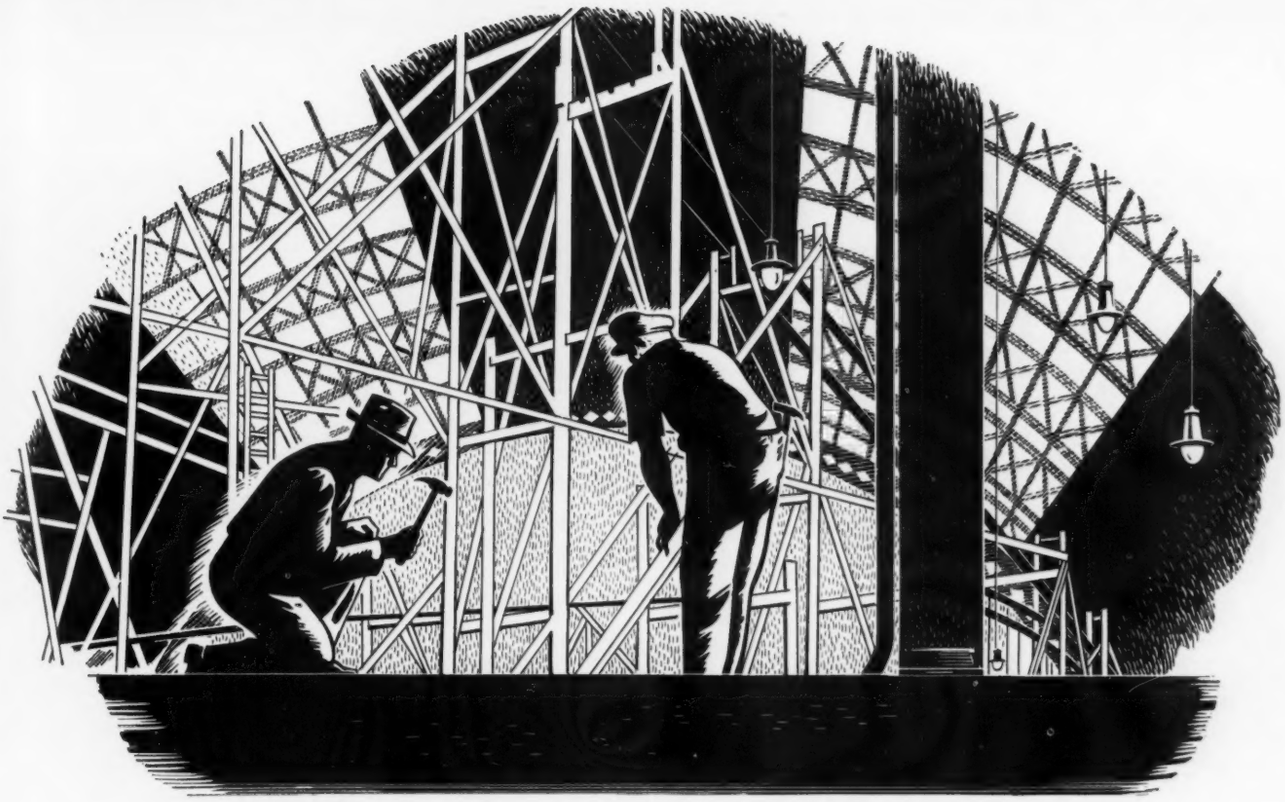
American Woolen Co. will reopen its Mascoma Mill, Lebanon, N. H., which has been closed for over two years. It is expected to reopen Jan. 1, 1941. The mill dam which was partially destroyed by the flood of 1938, will be rebuilt. C. A. Mortensen of the Baltic mill at Enfield, will probably also head the Mascoma mill. There will be two shifts.

American Woolen Co., on Oct. 9 recalled 35 employees to their jobs at the company's Sawyer mill in Dover, N. H., to manufacture a quantity of yarn for use in another plant.

Angus Park Woolen Co. unit at Glastonbury, Conn., closed for three years has been sold. The firm continues, as previously, to operate its main plant at Hanover, Conn., full time.

Bell Co., Worcester, Mass., began construction Oct. 1 of a one-story, steel-concrete building 200 x 80 ft. for wool warehouse and grading. It will cost about $40,000.

Biltmore Spinning Co., Asheville, N. C., is expected to begin operations this month. The new mill will occupy three brick buildings and will represent a cost of $75,000. The mill



THE SOUND OF HAMMERS THROUGHOUT THE LAND

is shaping your plans for 1941

Inescapably, your plans for next year must be tuned to the swelling prelude of men with hammers—as new factories, hangars, barracks and a thousand other symbols of the nation's efforts take form from coast-to-coast. Columbia is keeping pace with these activities through constant improvement of all our products—and the most rigid check on our production. We can offer substantial help to you right now in arranging for your requirements of Caustic Soda, Soda Ash, Liquid Chlorine, Sodium Bicarbonate and related products.

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for Results

USE
Mc GRAW-HILL
DIRECT MAIL LIST SERVICE

will spin heavy woolen yarns for rug manufacture. Frank M. Weaver, Jr. is president, and manager of the company, and Marry Hollins is secretary and treasurer. Within the next year the company plans to add carbonizing, scouring and dyeing facilities.

Blackburn Worsted Co., Inc., 125 Hudson St., Northboro, Mass., recently organized, plans operation of mill. Frederick Blackburn, is treasurer.

Blackinton Co., North Adams, Mass., may reopen as citizens have already pledged a total of $18,000 towards the capital of the new corporation which is to operate the plant.

Charlestown Woolen Co., Claremont, N. H., has resumed operations after a three-year shutdown, to spin yarn presumably for Army fabrics. Keene Silk Fiber Co. has rented the plant from Dorr Woolen Co.

Collins & Aikman Corp., Bristol, R. I., is completing plans for one-story addition, to be equipped as a grease recovery unit. Cost reported about $40,000. Weston & Sampson, Boston, Mass., are engineers.

Dunn Woolen Co., Martinsburg, W. Va., plans one-story addition for increased capacity, reported to cost close to $30,000, with equipment.

Glenside Mills Corp., Skaneateles Falls, N. Y., has been chartered to take over and operate former local mill of Glenside Woolen Mills, Inc., idle since 1938. Improvements are being made in buildings and equipment, with installation of new machinery. Plant is scheduled to be ready for operation by close of year. P. J. Torchiana, formerly vice-president of Collins & Aikman Corp., Philadelphia, Pa., is president of new company. Albert W. Drobile, consultant, of Philadelphia, is vice-president. Thomas Kiernan is secretary.

Greystone Woolen Mills, Stony Creek Mills, Pa., formerly the American Worsted Mills, were sold at auction, Oct. 15. It was a two set mill.

Holyoke (Mass.) **Worsted Co.,** has been incorporated by Donald R. Green, Joseph Metcalf, former Farr Alpaca Co. officials, and Addison B. Green to acquire the Holyoke Worsted Mills. The deal has not been completed. Capital is $67,500.

Jamestown (N. Y.) **Worsted Mills, Inc.,** have been purchased at a creditors' sale by a group of local business men. Reorganization of the company and resumption of operations are planned. Prior to its shutdown in August, the plant had been in continuous operation since it was founded in 1873.

National Worsted Mills, Jamestown, N. Y., have completed revised plans for one-story addition, about 30 x 200 ft., to mill at Falconer, N. Y., and will take bids on general contract. Bids received in September on former plans were rejected. Cost reported over $50,000, with equipment. Beck & Tinkham, are architects.

Provo (Utah) **Woolen Mills,** closed since November, 1918, is seeking capital to permit starting up on army goods.

Cen-Tex Wool & Mohair Co., San Marcos, Tex., which started up last spring has purchased the machinery of a woolen mill at Huntinburg, Ind., and will remove it to San Marcos. Machinery includes 17 looms said to be suitable for the making of Army blankets.

Waterford (Conn.) **Woolen Co., Inc.,** has filed organization papers and lists the following officers: President, Arthur J. LaCroix; vice-president, Anna Statnekoo, Mount Kisco, N. Y.; treasurer, Gerard E. Haagens, South Nyack, N. Y.; secretary, Leonard Prince, New York, N. Y.; and assistant treasurer, David A. Haagens.

Rayon & Silk Mill News

American Enka Corp., Enka, N. C., which suffered heavy damage by a recent flood has had this damage repaired and is running at capacity.

Bristol (Tenn.) **Weaving Co.,** plant of the Burlington Mills Corp., has installed 24 additional looms on rayon piece goods.

Burlington Mills Co., Greensboro, N. C., has let general contract to Herman Snipe & Co., Conover, N. C., for one-story addition to branch mill at Newton, N. C. Cost reported over $35,000.

Canadian-Industries, Ltd., Montreal, Canada, which is jointly owned by E. I. du Pont de Nemours & Co. and Imperial Chemical Industries, Ltd., of England, will build a plant to manufacture Nylon in Canada. Cost of plant to be $1,500,000; construction to be completed next fall.

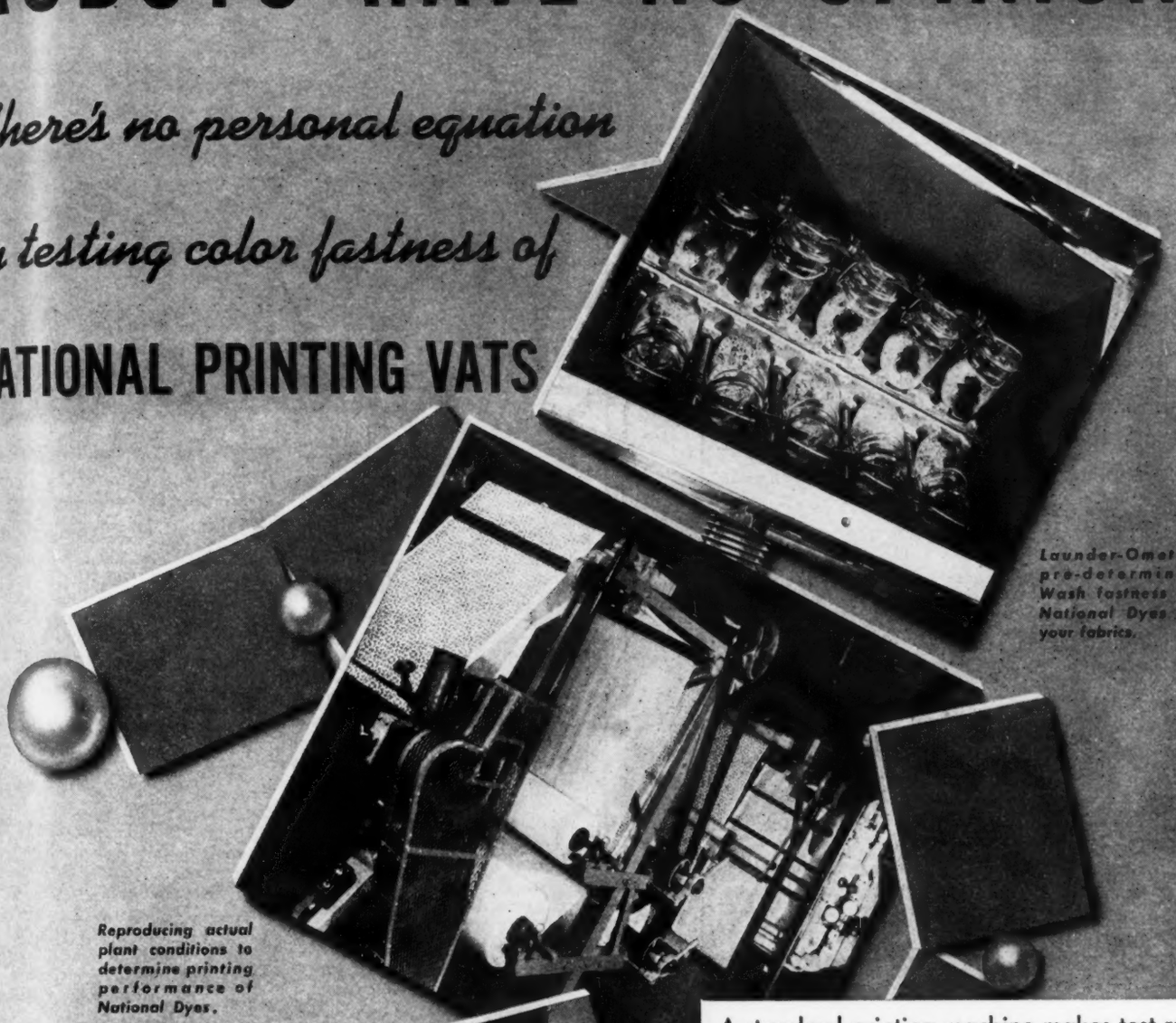
Celanese Corp. of America, Inc., New York, N. Y., plans early erection of three-story addition to plant at Amcelle, Md., 100 x 400 ft., reported to cost over $225,000, with equipment. Bids have been asked for general erection. The Cumberland, Md., plant resumed Oct. 3 after a shutdown due to labor.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.,

ROBOTS HAVE NO OPINIONS

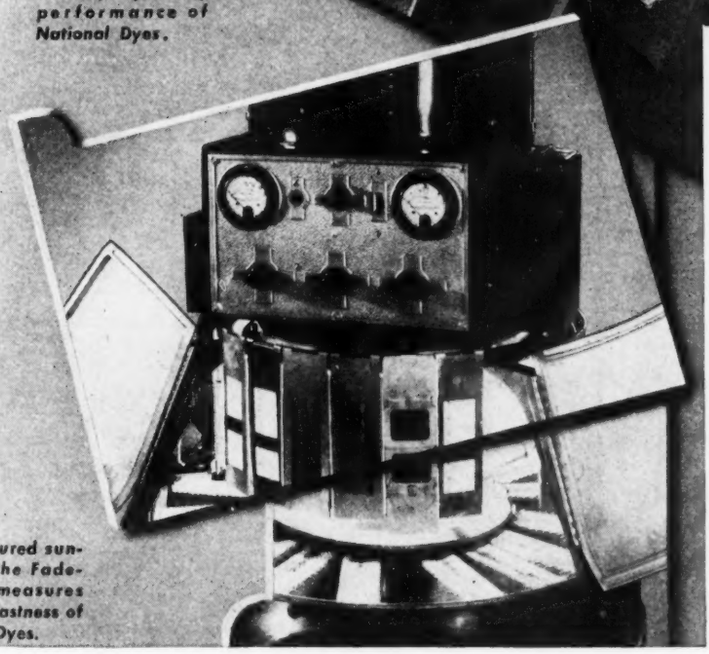
There's no personal equation in testing color fastness of

NATIONAL PRINTING VATS



Launder-Ometer pre-determines Wash fastness of National Dyes in your fabrics.

Reproducing actual plant conditions to determine printing performance of National Dyes.



Manufactured sunlight of the Fade-Ometer measures the light fastness of National Dyes.

A standard printing machine makes test runs to duplicate your "sample to match". A Fade-Ometer blazes at swatches. Mechanical agitators swirl them in detergent solutions under controlled conditions. All the practical operations of printing, finishing, storage and even mistreatment by the consumer are magnified in the National Textile Service Laboratory to determine "to the hour" the fastness of National Vats.

National Printing Vats disperse instantly, give you clean, sharp colors in every fine line and stipple of the printing roll . . . flat, level surfaces in the mass areas . . . with fastness that meets or surpasses all accepted color-fast standards.

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PROVIDENCE	15 Westminster St.	CHARLOTTE	201-203 W. First St.	CHATTANOOGA	James Bldg.
CHICAGO	357 W. Erie St.	GREENSBORO	Jefferson Standard Bldg.	PORTLAND, ORE.	730 West Burnside
PHILADELPHIA	200-204 S. Front St.	ATLANTA	140 Peachtree St.	TORONTO	137-145 Wellington St., W.

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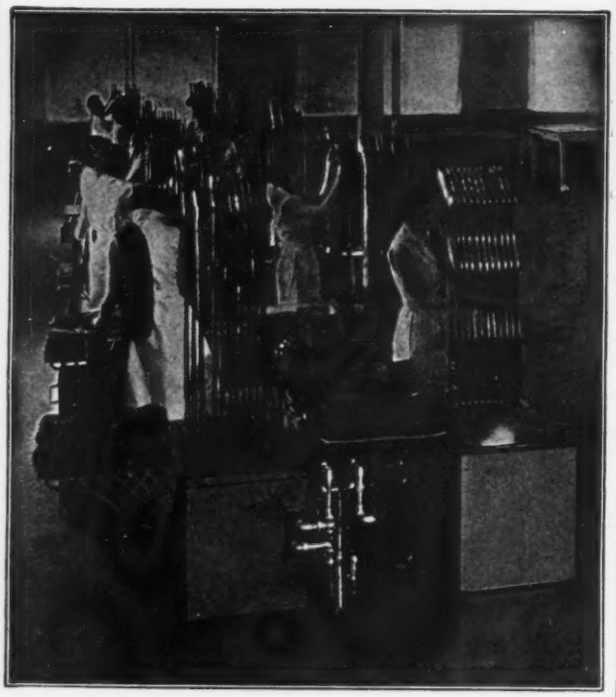
PARAMOUNT DUAL HEAT

1000 DOZENS DAILY

HOSIERY FINISHING



A PRODUCTION in excess of 1,000 dozens full fashioned ladies' hosiery is being finished daily on the 13 PARAMOUNT DUAL HEAT MACHINES operated in this mill during one eight-hour shift—and the character and quality of the work is incomparable since the PATENTED DUAL HEAT principle of drying is positive protection against "baking" delicate silk fabrics. Not only does the PARAMOUNT DUAL HEAT MACHINE contribute outstanding features of production and quality, but it represents—

1. Less investment per dozen
2. A minimum of floor space occupancy
3. Less power and steam consumption per dozen
4. Ideal room and working conditions
5. Less maintenance
6. Ease and comfort to the operator
7. Simplicity and durability of construction

Any one feature alone, of the numerous advantages which the PARAMOUNT DUAL HEAT MACHINE offers, will justify a change to this superior method of hosiery finishing.

WRITE FOR DETAILS

Furnished on SALE or RENTAL Plan.

PARAMOUNT TEXTILE MACHINERY CO.

538 South Wells Street Chicago, Illinois

OWEN-OSBORNE, INC.—New one-story addition, to plant at Gainsville, Ga., 65x300 ft. Construction is in hands of McCoy Construction Co.; J. E. Sirrine & Co., are the engineers.

has plans under way for new mill for production of Nylon yarns, on tract of about 497 acres of land on Smith River, near Martinsville, Va., recently purchased. Several large units will be built, with power house, pumping station, machine shop and miscellaneous structures. Cost estimated about $12,000,000. Bids are scheduled to be asked soon for general erection. Initial units are scheduled for completion before the close of next year, and complete plant in spring of 1942. Its capacity will be about 8,000,000, or the same as the double unit at Seaford when that is completed.

Industrial Rayon Corp. reports net profit of $1,720,230 for first nine months of 1940, against $569,956 for same period in 1939.

Luray Textile Co., Richmond, Va., has under construction a new plant to cost $75,000.

Montauk Mills, Inc., New York, and **Majestic Weaving Mills,** New Bedford, Mass., have been bought by Murray Antkies, New York, who is now acting as president and treasurer of both concerns. He is also in charge of the uptown division of the Glasgo (Conn.) Finishing Co.

Montgomery (Pa.) **Mills Inc.,** will engage in the manufacture and distribution of textile trimmings. Principals of the new firm, all of New York, are William J. Rosenberg, president; Joseph Bernhard, vice-president and treasurer, and Benjamin Penner, secretary. Hugo Klahre is factory superintendent. Firm has acquired former plant of Montgomery Table & Desk Co., a 3-story and basement steel and concrete structure, providing approximately 100,000 sq. ft. of floor space. Building will be modernized and equipped with latest machinery, and is scheduled to begin production about Dec. 1. Company plans later to build an additional unit to provide another 100,000 sq. ft. of floor space.

Summit Thread Co., East Hampton, Conn., has been sold to Jacob Grossman, Quincy, Mass., for $4,300. Belding Heminway Corticelli Corp., acquired the mill sometime ago, but closed it April 1 when machinery was moved to Putnam.

Susquehanna Silk Mills reports net loss of $275,007 for year ended May 31 last, compared with net loss of $215,351 for previous fiscal year.

Tioga Silk Co., Inc., York, Pa., has begun superstructure for one-story mill addition, for which erection contract recently was let to L. M. Klunk, York. Cost approximately $45,000, with equipment.

Tubize Chatillon Corp., reports profits for nine months ended Sept. 30, 1940, as $1,236,113, against $625,229 for same period year before.

Knitting Mill News

Abbeville (Ala.) **Hosiery Co.** has begun operations with Arthur Deal as manager and 25 workers. It is understood that Interstate Hosiery Mills will take the output.

Alden Mills No. 2, Meridian, Miss., have resumed operation, after being temporarily closed.

Bradham Hosiery Mill, Rutherfordton, N. C., manufacturer of men's plain and fancy half-hose, has discontinued business and the mill has been dismantled.

Colonial Knitting Mills, Philadelphia, has sublet its plant at Cape May Court House, N. J., to another manufacturer who will reopen it.

Derby Underwear Co., Bowling Green, Ky., will install more than $100,000 worth of new machinery in a 100 x 280 ft., 2-story building which has been constructed by Bowling Green Industrial Foundation at a cost of $85,000.

Golden City Hosiery Mills, Villa Rica, Ga., announces that

"Service with Speed on the Parts We Need"

"YOU are giving us service with remarkable speed on the parts we need" —is what many mills throughout the country are writing and telling us.

The rapidly increasing demand for hosiery and underwear is making it more and more imperative for mills to keep their knitting machines operating at peak efficiency.

Everywhere idle machines are being started up; worn parts that would "do" under less exacting conditions are being replaced; new parts are needed over night for wholesale changes of patterns to meet the public demand.

As the result of planning and special effort we can now ship most parts orders on the same day received—even those coming in late in the afternoon! It is our aim to have available at all times in our parts stock department at Laconia *all* the fifty-odd thousand different standard parts *any* mill may require for *any* S & W machine.

The wise mill maintains a safety stock of parts most frequently replaced. The parts *you* need are here, ready for shipment at a sign from you. To save time, air mail, telephone, telegraph or teletype your rush orders. Teletype service is free from our High Point and New York offices.

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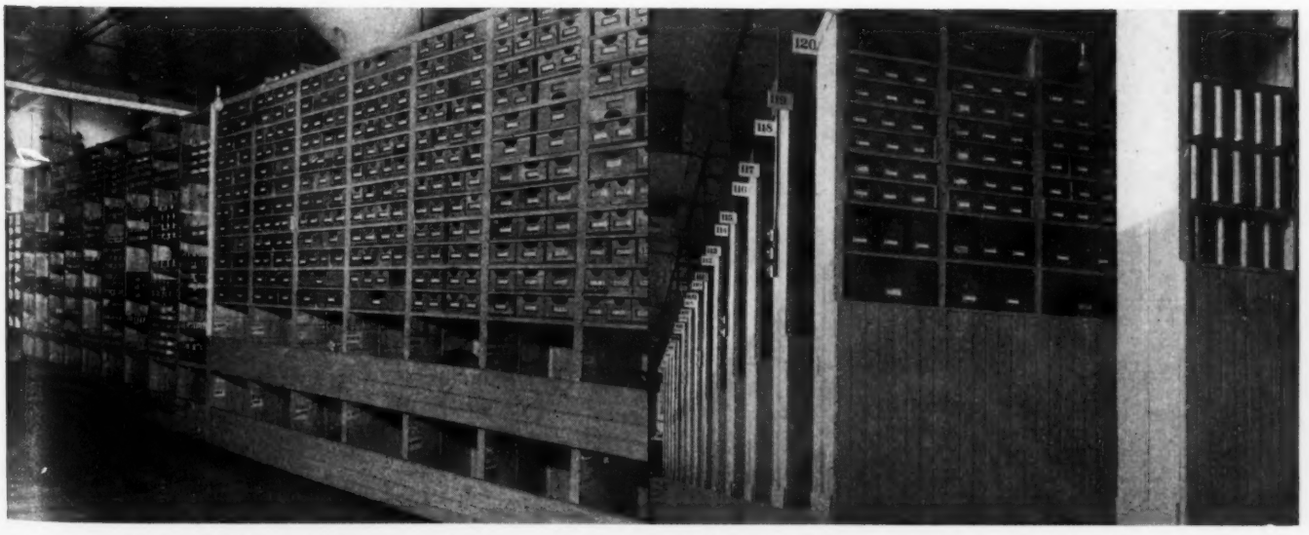
"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"



THE PARTS YOU NEED ARE HERE . . . In Scott & Williams' stockrooms at Laconia 36,594 bins such as these contain stocks of more than 55,400 different parts—ready for shipment at a moment's notice.

STANDARD

G. W. LEWIN Straight WEAVERS' COMBS

Patent No. 172864

Highly polished brass backs. Hardened steel pins with hardened steel pick-out point of special steel which will not bend.

Style 880—Curved 80 fine pins
Style 860—Curved 60 coarse pins
Style 840—Curved 40 coarse pins
Style C80—Straight 80 fine pins
Style C60—Straight 60 coarse pins

Price $2.00 Dozen—$20.00 Gross.

Manufactured by

STANDARD MILL SUPPLY COMPANY

1076 MAIN ST. PAWTUCKET, R. I.

Southern Standard Mill Supply Co., Charlotte, N. C.

From a single hair to 2,000 lbs.

Scott Testers* include equipment for tests for tensile, burst, flexing, compression cutting, etc., recording the result in a picturized form recognized as Standard by Societies, Laboratories and technicians the world around.

SCOTT TESTERS

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HENRY L. SCOTT CO. Providence, R. I.

RINSES . . EASILY AND COMPLETELY

DRUMMOND SOAP

- Rinses easily and completely.
- Saves scouring time and steam costs . . . Improves fulling and scouring operations.
- Gives the softest feel and better handle.
- Makes colors brighter.

OTHER HIGH GRADE "STANDARD" PRODUCTS
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on the products of many firms represented in this issue of TEXTILE WORLD, see the 1940 edition of the TEXTILE WORLD YEARBOOK AND CATALOG.

Complete list of catalogers on pages 228 & 229 of this issue of TEXTILE WORLD.

TEXTILE MILL NEWS

C. M. Griffin has purchased the interests of E. J. Williams. Plant will continue to operate as formerly. Mr. Griffin has been president and superintendent, and Mr. Williams secretary, treasurer and buyer.

Durham (N. C.) **Hosiery Mills,** No. 6 unit, closed for the last two years, will be opened at an early date, W. F. Carr, vice-president and secretary, announces.

Harrill Knitting Co., Rutherfordton, N. C., manufacturers of half hose, has discontinued business and the mill has been dismantled.

Label Hosiery Co., and **Rextex Hosiery Mills, Inc.,** Chattanooga, Tenn., seamless hosiery plants operating in the same building, have gone out of business and the machinery has been moved.

LaReine Hosiery Mills, Zeeland, Mich., are starting up after a shutdown, and will install new machinery.

Lauderdale Hosiery Mills, Fort Lauderdale, Fla., temporarily closed, will probably be moved to another site in the same town.

Liberty (N. C.) **Hosiery Mills** have awarded contract to C. M. Guest & Son for an addition to their plant of 4,200 sq. ft. of floor space.

Marlowe Hosiery Mills, Hickory, N. C. has constructed a new office and has renovated other parts of the plant.

Morristown (Tenn.) **Knitting Mills** have established a plant at White Pine, Tenn., with approximately 80 knitting machines and auxiliary equipment. The dyeing and finishing operations will be done at the company's plant at Morristown. It recently established a unit at Dandridge.

Prescott (Ont.) **Glove Co., Ltd.,** has plans under way for one-story addition to knitting mill on Water St., estimated to cost close to $45,000, with equipment. Work will begin soon.

Prim Era Hosiery Mills, Inc., Chester, Ill., full-fashioned hosiery, has let a contract for an addition which provides 10,000 sq. ft. floor space, to be used for finishing, be ready Nov. 15.

Real Silk Hosiery Mills, Inc., Indianapolis, according to a preliminary estimate for the first half year, will show a consolidated loss of $482,329.86 after depreciation of $157,400.05 and all other charges. This compares with a consolidated profit of $63,557.79 for the same period last year.

Ringgold (Ga.) **Hosiery Mills** has begun manufacturing children's hosiery. W. F. Hedges of Chattanooga, Tenn., is operator. Plant is located in the old Whitsett House.

Standard Hosiery Mills, Alamance, N. C., have recently installed 20 new 200-needle "Komet" links-and-links machines and ten 132-needle machines, at cost of $60,000, for manufacture of broad rib 50¢ half-hose.

Union Mfg. Co., Union Point, Ga., has increased hosiery production, and is now employing about 600 operatives.

Unionville (Conn.) **Mfg. Co.,** including land, machinery and buildings, was sold at public auction Sept. 26 for $21,500 to the Myrtle Knitting Mills which has rented the property for some years.

Valley Rose Hosiery Mills, West Grove, Pa., operating 42-gage full-fashioned machines, was sold at auction Oct. 28.

Van Raalte Co., Inc., reports net profit for the third quarter of 1940 of $174,147 compared with $178,106 for same quarter in 1939.

Walton Hosiery Mills, Defuniak Springs, Fla., have been purchased by W. F. Green, local attorney. Plans are under way to operate the mill again.

Wilson (N. C.) **Mfg. Co.,** offered for sale its full-fashioned machinery, equipment and real property by auction on Oct. 30.

Processing Plant News

Marshall Field & Co. has moved the dyeing department of its Tri-City units located at Draper, Spray, and Leaksville, N. C., to Draper, N. C. The company's building program has prepared for this.

Philadelphia (Pa.) **Piece Dyeing Co.,** recently organized, will operate a dyeing and finishing mill at 2720 Jasper St., where property has been leased, totaling close to 10,000 sq. ft. of floor space. New company is headed by George S. Threlmall and Jesse J. Hilles; latter was previously connected with the Arimingo Dyeing Co., Philadelphia.

Ramapo Finishing Corp., Sloatsburg, N. Y., in bankruptcy reorganization has petitioned the court to allow it to liquidate as efforts to raise $25,000 to continue the business were unavailing.

Sunbury (Pa.) **Converting Works** has been sold to Hercules Powder Co., along with 300 acres of land for $302,500.

Preparedness

Preparedness — To Make Ready for the Future. Our Nation is Spending Billions for it, and most of us would Feel Safer if we had Started the Spending Sooner.

Modern Industry believes in Preparedness. The Automobile Companies begin Work on Newer Models as soon as the Year's New Model has been put on the Market. And even while Business is Still good they Halt Production to put in Machinery to Build Next Year's Cars.

The Textile Industry is an Old Industry and has many traditions to discard. Young Men in some mills and Progressive Older Men in others believe in Preparedness. They know that Looms of a Few Years Ago must be replaced by Looms of Today whenever Today's Looms are Better.

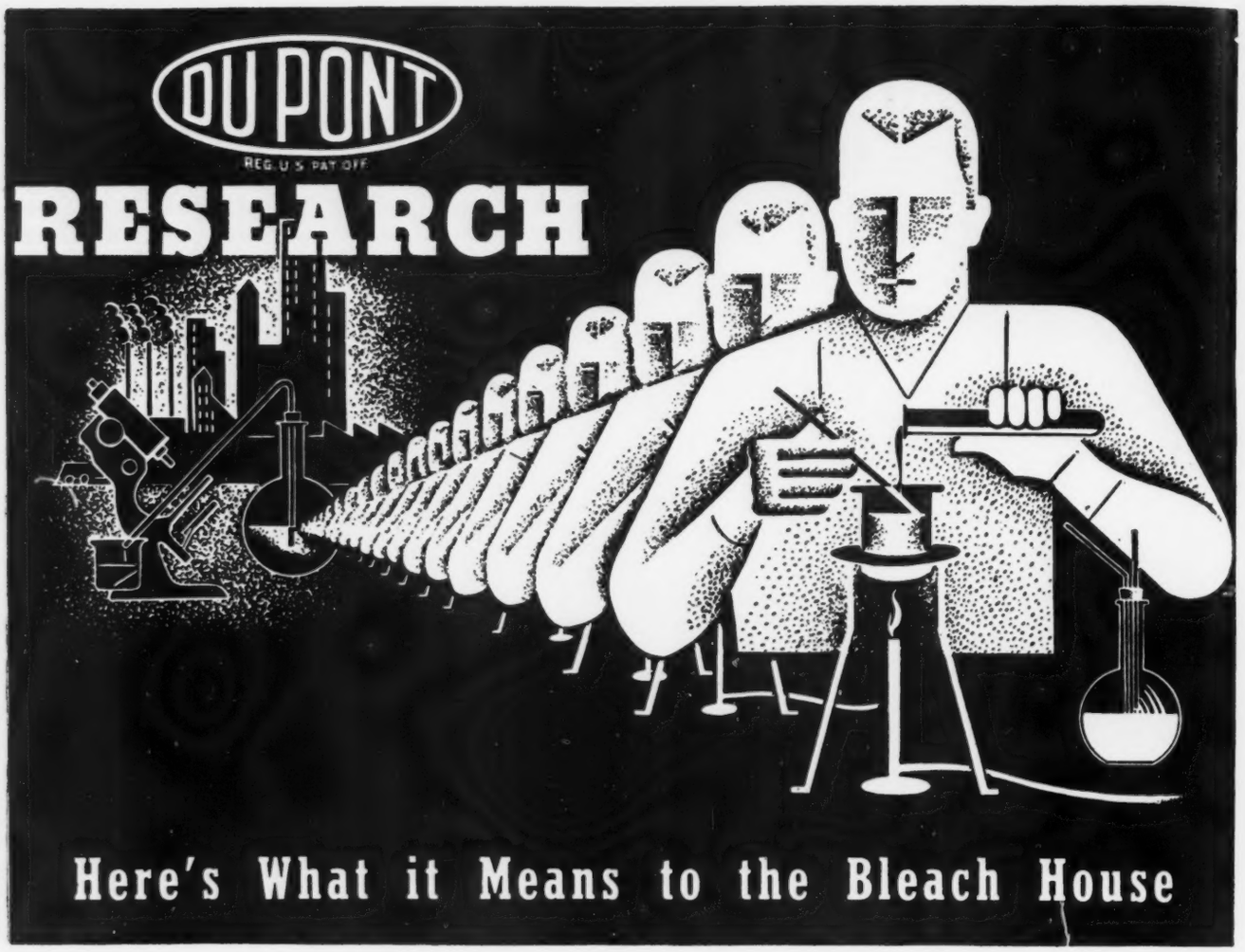
High Speed X Series Looms Are Better Looms They Are At Least 20% Faster They Have Been Proved Progressive Mills Are Buying Them

Many Who Hesitate today say: "The Cotton business is too good to curtail for the installation of Even a Few New Looms." "The Rayon business is slowing up. I'm not Sure of the Future, I can't afford to Buy Looms."

Learn from the Automobile Builders ❖ They Prepare for Good Business ❖ They Get Good Business ❖ They Make Money on it

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C



Here's What it Means to the Bleach House

An outstanding characteristic of the du Pont Company is the emphasis it places on a large research organization. In the field of Peroxide Bleaching du Pont has been actively engaged since 1896. In these 44 years it has gained a wealth of bleaching information—the result of extensive work in its adequately equipped research laboratories amplified and supplemented by experience attained in the field.

A great many contributions to bleach house practice have come from this study and research, from pioneering with new processes, from modifying routine processes to keep pace with bleaching demands created by new fibres and fabrics.

Constant changes are taking place in textiles—and they will continue. But du Pont, with its wide experience in the textile industry and its broad research facilities will meet the changing demands.

DU PONT
REG. U.S. PAT. OFF.

PEROXIDES
ALBONE*
Du Pont Hydrogen Peroxide
100 vol. Electrolytic
DFF† SOLOZONE*
(Du Pont Sodium Peroxide, dustless and free flowing)
SODIUM PERBORATE
*Reg. U. S. Pat. Off.
†Trade Mark

"Cavalcade of America"—back on the air—every Wednesday 7:30 P. M., E. S. T. Nation-wide Network

DU PONT
REG. U.S. PAT. OFF.

The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Wilmington, Delaware

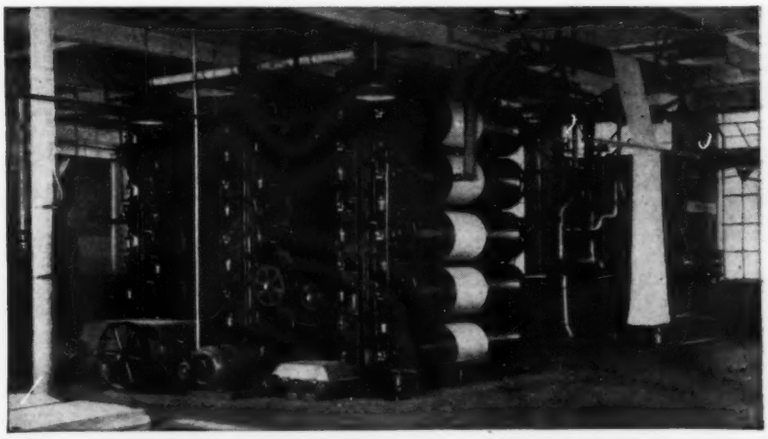
District Sales Offices Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

BIG SUCCESS *with*
stock conditioning system

FOR YOUR SPINDLES

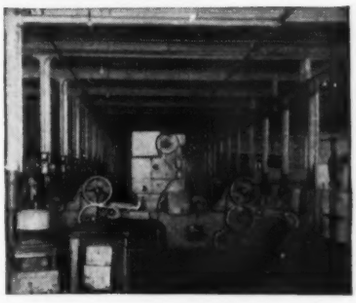
● A spindle oil which stubbornly resists oxidation, sludge formation, "fogging"... *Texaco Spindura Oil.* You get better lubrication with less lubricant, avoid vibration and lagging, produce more uniform yarn. (Write for this *Texaco Spindura* Leaflet.)

TEXACO SPINDURA



(Above) SANFORIZER and dryer built by Textile Finishing Machine Co., and lubricated with *Texaco Starfak.*

(Below) PICKER ROOM at Gainesville, Ga., Pacolet Manufacturing Company mill. 14 S-L One-Process Pickers equipped with *Texaco Texspray.*



AFTER abandoning trials with cotton conditioning of another type, the Pacolet Manufacturing Company is now enjoying the money-saving benefits of the *Texaco Texspray System.*

Applied at the pickers, this system keeps the mill practically free from dust and fly, assures healthier working conditions. Static is lessened and breaking of long fibres greatly reduced.

Texaco Lubricants keep bearing wear, stock spoilage, power and lubrication costs at a minimum.

Trained lubrication engineers will gladly cooperate in making savings with Texaco Lubricants in your mill. Phone the nearest of more than 2300 Texaco warehousing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

FIBRE CONDITIONING latest 32-page booklet explaining the *Texaco Texspray System.* Yours for the asking.

TEXACO DEALERS INVITE YOU TO ENJOY

FRED ALLEN in a full-hour program every Wednesday night. CBS, 9:00 E.S.T., 8:00 C.S.T., 10:00 M.S.T., 9:00 P.S.T.

METROPOLITAN OPERA every Saturday afternoon, NBC. See local newspaper for time and station.

TEXACO
LUBRICANTS FOR TEXTILE MILLS

The Service Industries

Comments by Henry G. Lord

Out of 50,000,000 people in this country who work for their living in various ways, over 10,000,000 are in the so-called "Service Industries." That means they do not produce tangible things for use or consumption, but perform some kind of service for the producers, so that they can do their jobs better or live their lives more comfortably and happily.

It is this publication's ambition to be classed as a Service Industry. There is an old saying that any one who can make two blades of grass grow where one grew before is a benefactor. And I'll bet it was a service man who helped develop that idea.

I am not handing bouquets publicly to the Textile World staff for the job they did on our November issue (hundreds of readers have done that), but if that "Modernizing for National Defense" issue wasn't a service job for the industry, then I do not know what is and we are in the wrong pew.

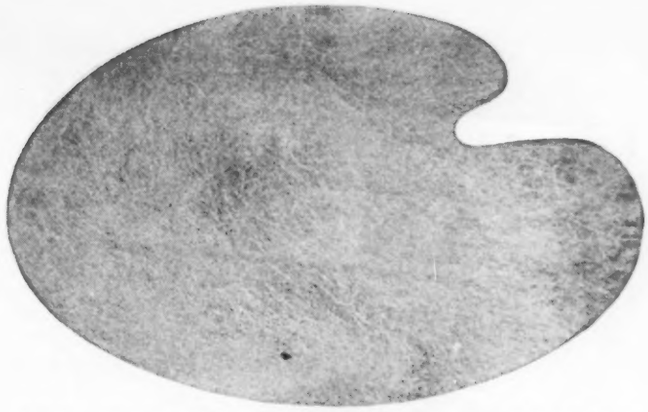
Those check-up schedules of mill efficiency made me think of the periodical overhauling that my doctor gives me every six months—blood pressure, pulse, lung test and a whole lot of other things—and it is certainly just as important for the manufacturer to check up his mill's blood pressure and efficiency as it is his own. The November issue showed him how to do it.

There is a big service job for all of us to do in the next few years in this National Defense business. I do not think most of us take it seriously as a personal responsibility and a challenge to our job efficiency. Bombs are not crashing around us as they are upon the workers in London, Coventry and Birmingham. But if this country is to give full aid to the British and maintain itself as a nation of free men, it will take the combined best efforts of every one of us, or else the bombs may be falling on us.

I conceive it to be also the duty of every concern that makes a machine or a tool or has a process or a product that will enable mills to turn out better goods or more of them, or reduce costs, to tell the world about it. That concern is a benefactor, like the man who could make two blades of grass grow where only one grew before; and this is not the time to keep the good news to itself.

HENRY G. LORD, *founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*

FOR GOVERNMENT SHADES ON WOOL



TOP CHROME DYED WOOL FIBERS

META CHROME DYED WOOL FIBERS

BOTTOM CHROME DYED WOOL FIBERS

Calcochrome Yellow CGW—100%

As the yellow component for Government shades on wool, Calcochrome Yellow CGW —100% has proved most satisfactory because of its ability to pass the rigid fastness tests specified by the Government.

Calcochrome Yellow CGW—100% is applicable by the three commonly used chrome methods which produce shade effects and possess fastness properties differing but slightly.

Calcochrome Yellow CGW—100% offers wool dyers another important feature . . . economy. Moderate cost plus flexibility of application means sound money value. Remember, too, the services of our Technical Service Staff are available without obligation to assist with your use of this or any other Calco color.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

Boston • Philadelphia • Providence • New York • Charlotte • Chicago

For Color in Textiles . . . it's Calco

★ CANNON MILLS

★ GREENWOOD COTTON MILL

★ PACIFIC MILLS

★ NAUMKEAG STEAM COTTON CO.

★ BIBB MANUFACTURING COMPANY

Preferred

BY THOSE BEST KNOWN

The products represented by these well-known trademarks have added to the home comforts of nearly every American family. They are of outstanding quality — and Saco-Lowell Controlled Draft Roving and Better Draft Spinning Equipment has been used in their manufacture.

Mills such as these do not make far-reaching decisions hastily or haphazardly. The outstanding efficiency of the Saco-Lowell Drafting units — with their effective fibre control over long-range drafts (regardless of the cotton being processed) — had a definite appeal to these successful manufacturers.

To mills—large or small—Saco-Lowell Controlled Draft Roving and Better Draft Spinning has proved a profitable well-planned investment. We will gladly give you further interesting facts.

SACO-LOWELL SHOPS

60 BATTERYMARCH ST., BOSTON, MASS., CHARLOTTE, N. C., GREENVILLE, S. C., ATLANTA, GA.

A "Rubber Railroad"

10 MILES LONG!

—world's lowest-cost transportation system

THE great installation you see here is one of the world's most spectacular engineering feats — the longest conveyor belt transportation system ever built! Ten miles long in all, this giant "rubber railroad" is the main line for transporting construction supplies to the great Shasta Flood Control Dam. Designed by the G.T.M. —Goodyear Technical Man— it beelines across wastelands, bridges rivers, climbs over a range of hills 1,350 feet high, carrying a peak capacity load of 22,000 tons per day. In four years it will deliver 10,000,000 tons of sand, gravel and crushed stone—*at far lower cost per ton than any other haulage method!* This mammoth conveyor is the outgrowth of other historic installations ranging from one to five miles in length that have proved the unrivaled economy of belt transit in handling huge tonnages over terrain where other transportation does not exist or costs prohibitively. If you have such a problem, consult the G.T.M. Write Goodyear, Akron, Ohio, or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

THE GREATEST NAME IN RUBBER
GOODYEAR

MFMA *Hard Maple floor in mill of Chiquola Manufacturing Company, Honea Path, S. C.*

You could walk for miles in Southern mills and never step off Maple floors. Some laid at the turn of the century, some almost yesterday—all giving satisfaction every day.

The Chiquola Manufacturing Company, plant illustrated, first laid Northern Hard Maple in 1902. Jas. D. Hammett, Assistant Treasurer, says "We have always considered it to stand up well and give complete satisfaction."

Hard Maple *always* stands up well—and stays smooth, speeds up traffic, is easy on workers, cuts floor costs.

So smooth and hard and tough, it actually "polishes" under traffic, creates no dust, doesn't catch lint—and is warm, dry, resilient and comfortable. It simplifies alterations and machinery shifting—lowers cleaning and maintenance costs, provides lowest cost per year of service.

It will do the same in *your* mill. When you buy trademarked **MFMA** Maple you are sure of all *Northern Hard* Maple, slow-grown in Northern forests. Ask your architect.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1793 McCormick Building, Chicago, Illinois

• • •

See our catalog data in Sweet's, Sec. 11/78.
Write for leaflet on heavy-duty finishes for old or new floors.

Floor *with* MFMA Maple

REG. U. S. PAT. OFF

(NORTHERN HARD)

Business Rise at Trion Dye Plant Attributed to "PERMUTIT"* Soft Water

"Superior quality of Trion dyed goods would be impossible without Permutit,"

says N. C. Davenport, Dye Plant Manager, The Trion Company, Trion, Ga.

One of the outstanding success stories in the textile world today is that of The Trion Company. Four years ago they built a large knitting and dye plant, to furnish material for their glove factory. Three 100,000 gallon automatic Permutit Softeners were installed.

Complete uniformity in dyed cloth

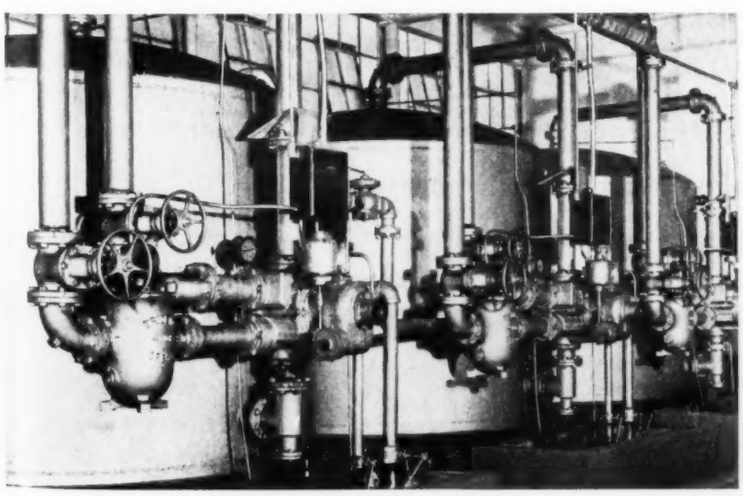
As a result of the "Zero-Hardness"* water supplied by these Permutit units the cloth emerges from the dye vats with no shading, no fading, no soap specks. The thousands of yards of cloth dyed each day are uniform in color from end to end. The dye is without spots, fast and even, thanks to the uniform softness of the water.

Better quality goods produced

What's more, plant officials say that dyed cloth at Trion is cleaner, softer and longer-wearing. In fact, so fine has Trion's reputation become that they do a large dye business for other textile and glove plants, in addition to their own rapidly expanding business.

Yet the raw water is hard--variable!

Trion draws the raw water from a hard water surface spring heavy in calcium, iron and other elements. In autumn, rotting vegetation varies the mineral content. Yet the water is always uniform and iron-free after treatment with Permutit Zeolite Water Softeners. There has never been any rusting or clogging of pipes during the entire four years that the Permutit equipment has been operating.



PERMUTIT CAN HELP YOUR BUSINESS, TOO

See how you can cut operating costs — actually improve your product — with economical Permutit water conditioning. For complete details on the newest fully automatic models, write The Permutit Company, Dept. B, 330 West 42nd Street, New York, N. Y.

*TRADEMARK REG. U. S. PAT. OFF.

PERMUTIT

WATER CONDITIONING *Headquarters*

NEW

THE MOST IMPORTANT DEVELOPMENT

IN TEXTILE MACHINERY FOR YEARS IS NOW OFFERED

THE WHITIN-SCHWEITER
AUTOMATIC FILLING BOBBIN WINDER*

THE FIRST FULLY AUTOMATIC, INDEPENDENT SPINDLE FILLING BOBBIN WINDER THAT HAS BEEN MADE AVAILABLE

It is suitable for cotton, woolen, worsted, linen, rayon, silk or other textile materials.

This machine will handle wound cones, tubes, dyehouse packages, roving, spinning or twister bobbins, as desired.

Speeds are from two to three times those used on non-automatic filling winders, with a very large increase in production.

The independent spindle gives higher efficiency, eliminates partially wound bobbins.

Magazine creeling saves machine stoppages, production losses.

Winding costs are greatly reduced. Better yarn preparation.

*(MANUFACTURED UNDER EXCLUSIVE LICENSE BY WHITIN MACHINE WORKS)

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C. **ATLANTA, GA.**

BECCO

Electrolytic HYDROGEN PEROXIDE

for *highest QUALITY... lowest COSTS... least SECONDS and REJECTS... latest and most practical BLEACHING PROCEDURES in the peroxide bleaching of cotton, wool, silk, rayon and specialties. You are invited to join the select list of firms which are profiting with* **BECCO** *Hydrogen Peroxide and* **BECCO** *Technical Service. Write Becco Sales Corporation, Buffalo, N. Y.; Boston, New York City, Philadelphia, Chicago, Charlotte.*

plus BECCO technical service

"Eye Appeal"

FOR YOUR RAYONS AND ACETATES

It takes more than smart designs to make your rayon and acetate fabrics "best-sellers." ***Finish,*** too—color, softness, draping qualities—adds a lot to their "eye-appeal" and sales appeal. And you know how much good finish depends on the processing you give these fabrics.

Olate processing can go far toward giving your rayons and acetates the pleasing finish that assures saleable goods. For this pure, uniform, low titer soap is particularly well qualified to safeguard fabrics in the scouring and dyeing operations.

Olate dissolves fast . . . penetrates rapidly and evenly . . . helps assure even shrinkage and level dyeing. Its free rinsing properties and gentleness do much to protect fabrics against streaks, dye blotches, creases and chafe marks.

Try Olate for scouring and dyeing your rayons and acetates. You'll get a generous return on your modest investment in this modern form of "processing insurance."

Procter & Gamble · Cincinnati, Ohio

Olate—for safe wet finishing

Answers to WHO IS DOING WHAT *with*

RELIANCE V★S DRIVE

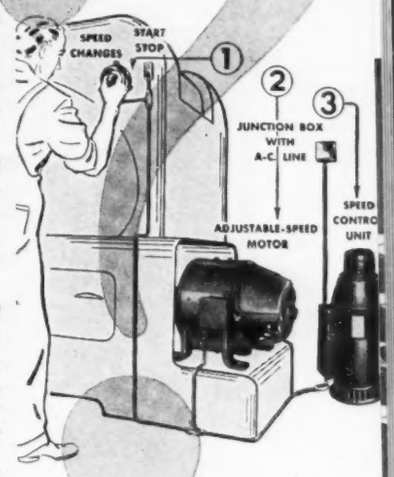
AN ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE FOR A-C. CIRCUITS

SPEED RANGES UP TO 12 TO 1
SIZES 1 TO 15 HP.

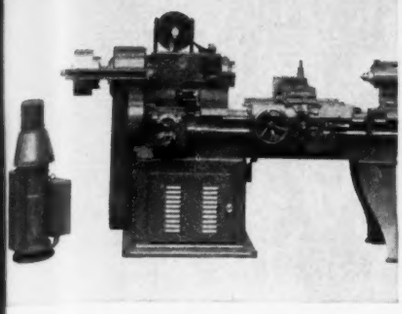
1. REMOTE CONTROL
Starting, stopping and speed changing are controlled from any point to which a wire can be run.

2. A SPACE-SAVER
Power is applied where you want it without an intervening speed-changing device.

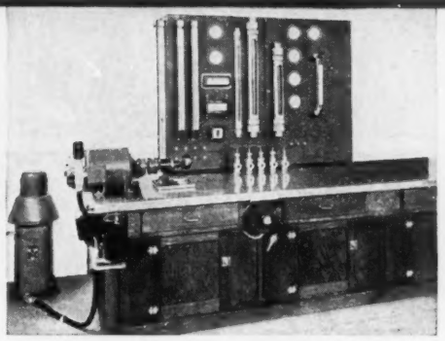
3. FROM A-C. SUPPLY
The advantages of this drive are now made possible at a new low price by the "packaged" V★S Speed Control Unit, connected by three wires to the 3-phase a-c. power circuit; it can be mounted anywhere.



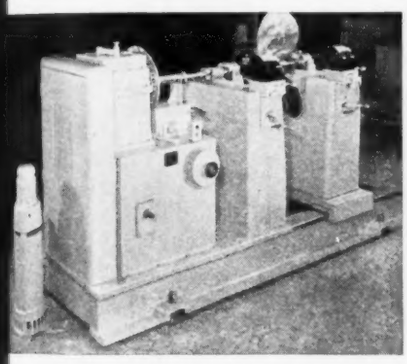
ALSO—Quick stopping, speed setting, reversing, safe speeds for threading and inching, ample starting torque for all conditions. Write for Bulletin 307.



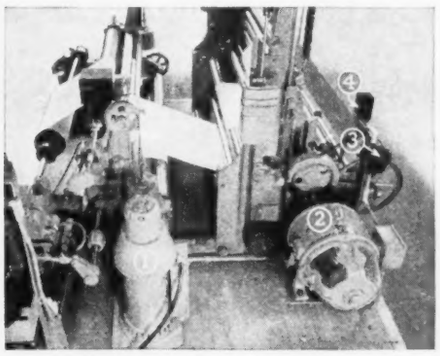
LATHE: A lathe builder gives machine-tool users something really new in this machine designed to make full use of the advantages offered by the Reliance V★S Drive.



TEST BENCH: Air transport companies use test benches like this to put pumps, magnetos, and generators through rigorous tests. Speeds range from 100 to 4200 rpm.

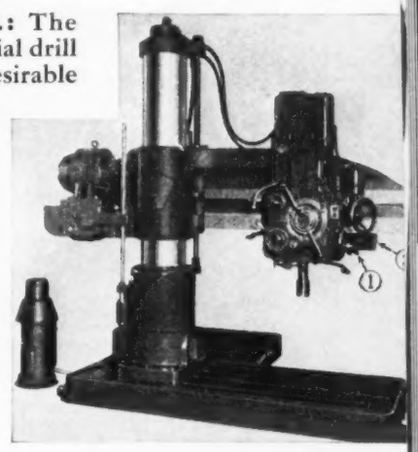


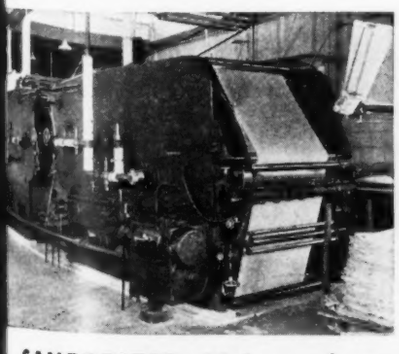
BALANCING MACHINE: An engine builder uses a V★S Drive on this machine designed for balancing propellers. A turn of a handle gives smooth changes in speed over a wide range.



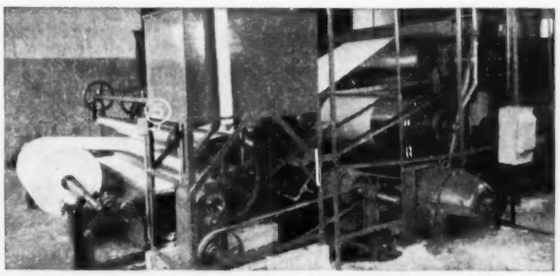
WINDER: A manufacturer of winders uses a 7½ hp. 1150/148 rpm. drive. Gets a low speed for threading and a top speed for the highest rate at which the roll can be wound.

RADIAL DRILL: The buyer of this radial drill gets all the desirable features of an easily-controlled adjustable-speed drive because the builder equipped it with a 7½ hp. V★S Drive. ➤➤

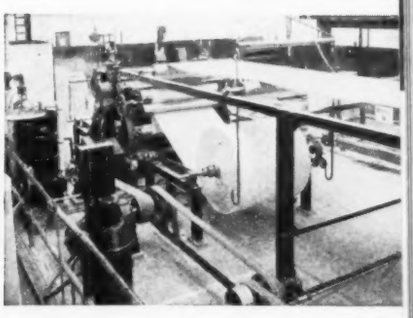




SANFORIZER: Makers of processing equipment such as this Sanforizer use the V★S Drive because it provides the desired operating speeds to suit a variety of materials. Also because it's easy to control starting, stopping and speed changing at points remote from the driving units.



WAXING MACHINE: A waxing machine manufacturer added buying appeal to his machine by using a 15 hp. 1750/218 rpm. V★S Drive. Waxing is done at higher speeds; smooth acceleration eliminates paper breaks.

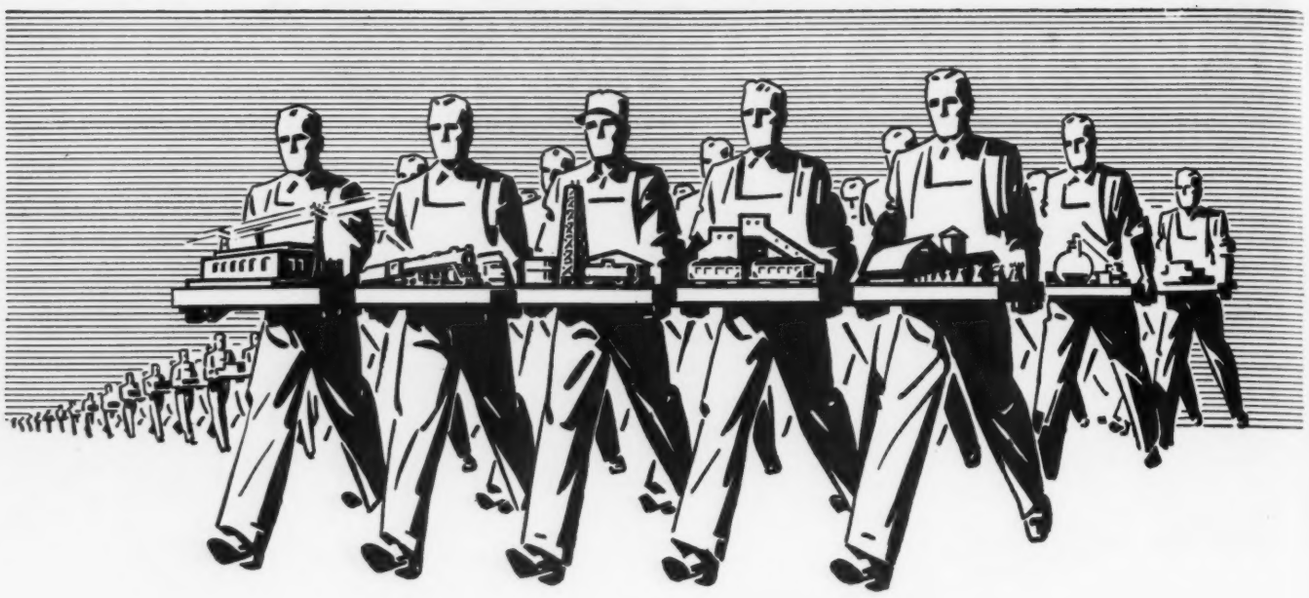


LAMINATING MACHINE: A fibreboard plant uses a 15 hp. 700/87 rpm. drive for a laminating machine.

RELIANCE ELECTRIC & ENGINEERING COMPANY
1081 IVANHOE ROAD • CLEVELAND, OHIO

BIRMINGHAM • BOSTON • BUFFALO
CHICAGO • CINCINNATI • DETROIT
GREENVILLE (S. C.) • HOUSTON (TEX.) • LOS ANGELES • NEW YORK • PHILADELPHIA
PITTSBURGH • PORTLAND (ORE.)
ST. LOUIS • SAN FRANCISCO • SYRACUSE
(N. Y.) AND OTHER PRINCIPAL CITIES

RELIANCE A-C D-C MOTORS



THE MINUTE YOU LOCATE IN ILLINOIS

These Profit Producers Go to Work for You

LIKE an army of unseen workmen, the outstanding industrial advantages of Illinois work day and night, year in and year out, to add to the prosperity of manufacturers who are located in Illinois. It is this exceptional *combination* of production, distribution, and marketing advantages which make Illinois the logical location for new plants and branch plants in so many industries. Check these advantages which you will gain by locating in Illinois:

FINE LABOR SUPPLY—Intelligent, skilled, and cooperative labor serves Illinois industry. RAW MATERIALS—Agricultural, mineral, and other vital materials for industry are available. MARKETS—Direct connections with National markets and overnight shipping service to the entire Middle West market. TRANSPORTATION—Direct rail, highway, water, and air transportation to every part of the Nation and to Central and South America. FUEL—Illinois is the third producing State in both oil and bituminous coal. WATER—Abundant water, supplied by eight great drainage basins. POWER—Facilities ample for today's needs and geared to tomorrow's requirements. EQUIPMENT—The second largest metal-working State, assuring adequate supplies of machines, parts, and tools. PLANT SITES—Ample room for new plants and expansion in every section of the State. TAXES—Illinois has NO State Income Tax, NO State Real Estate Tax, NO State Machinery Tax.

Special Confidential Report to Executives

Write the Illinois Development Council, at Springfield, for full data on the Industrial Advantages of Illinois. Please describe the nature of your business and list any special or unusual requirements in labor, raw materials, plant facilities, or any other production or distribution factor, in order that a truly practical and informative report may be submitted for your consideration. Your inquiry will, of course, be kept confidential. Write—

ILLINOIS DEVELOPMENT COUNCIL • STATE HOUSE • SPRINGFIELD, ILLINOIS

ILLINOIS

THE STATE OF BALANCED ADVANTAGES

DAYLIGHT BROUGHT INDOORS WITH HYGRADE FLUORESCENT!

Finest quality Fluorescent Lighting—
complete "packages" of daylight—
MIRALUMES

Inspections and color-matching now many times easier and faster!

You can now pour *daylight* into every corner of your plant or mill . . . 24 hours a day, if need be . . . with HYGRADE MIRALUMES!

These sensational, complete new Fluorescent lighting fixtures provide several times *more light* —light that's *softer, more evenly diffused*—light that's *50% cooler!*

With MIRALUMES, glare and shadows vanish!... eye-strain and accidents are avoided!...men working at machines see better, *work* better, *feel* better!

MIRALUMES are complete units—wired and ready to install without costly re-wiring—eligible for FHA financing! Consult your Electrical Contractor today!

30 foot-candles of illumination provided by MIRALUMES in Drayton Mills, Spartanburg, S. C.

INDUSTRIAL MIRALUME F-100: 100-watt unit; 2 40-watt lamps; length 54". No nuts or bolts to break the porcelain enamel reflector surface.

SHOWN HERE is one of many MIRALUMES available. MIRALUMES are the only Fluorescent Lighting Units made *complete*—lamps, fixtures and starters—under *one roof!* Designed, engineered, built, sold complete and *guaranteed* by HYGRADE! Quality manufactured to meet the highest standards. Corrected for power factor and stroboscopic effect (flicker). Starters easily accessible. Maintenance cost low! Underwriters Laboratory Approved.

NOTE: **Extraordinary lighting efficiencies are obtained in fluorescent lamps, and by tuning the electric discharge to concentrate ultra-violet energy at the precise 2537 Angstrom Unit wavelength most effective in causing the porous film (Hygrade patent 2096693) to generate light, the best results are secured. The means for achieving these results so important to the efficiency of HYGRADE LAMPS, are described in patent numbers 2126787 and 2201817 now controlled in this field by HYGRADE. The high power factor non-stroboscopic circuit used in this unit is described in Hygrade patent No. 2195114.**

WRITE TODAY for free MIRALUME catalogue with complete information, prices, discounts. Address: Dep't TW12, Hygrade Sylvania Corp., Ipswich, Mass.

Fluorescent at its Finest—

Hygrade Miralumes

Hygrade Sylvania Corp., Est. 1901. Makers of Hygrade Incandescent Lamps and Sylvania Radio Tubes

Copr. 1940 Hygrade Sylvania Corp.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

•

ESTABLISHED 1840

Variety of Types

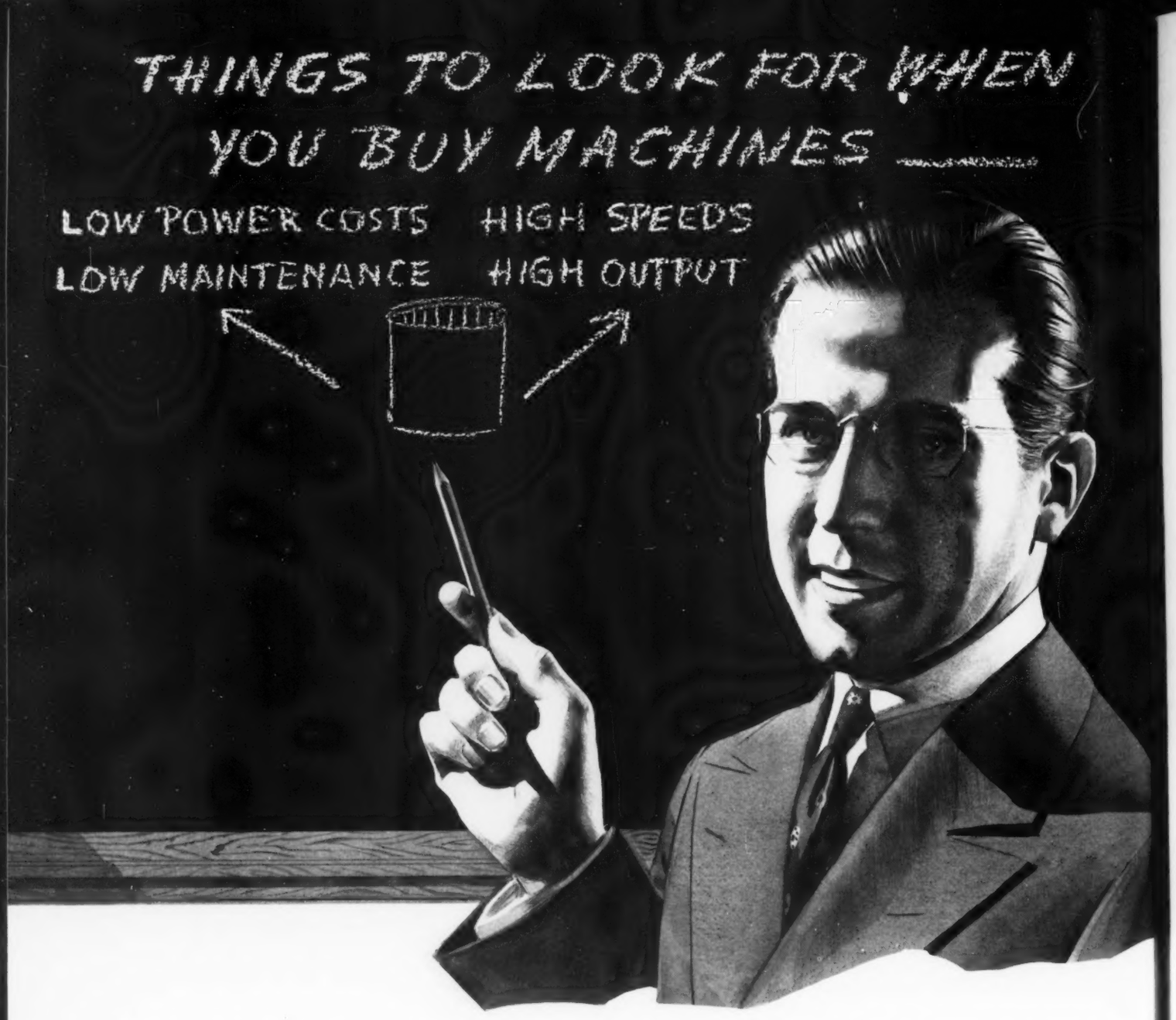
Of prime importance in keeping your mill supplied with needles is the assurance of securing the right types at the times they are needed. And of equal importance is the assurance of uniformity in each type. The first to keep production going smoothly; the second to keep knitting on a high standard. The wide variety of Torrington types covers your regular and special needs. And the machine precision of Torrington manufacture assures you uniformity in whatever types you use. Torrington machine methods mean *reliability*—reliability in every detail that helps to produce even, high quality knitting. Use Torrington Needles—for variety of types and uniformity in good knitting qualities.

TORRINGTON
Latch
NEEDLES

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A. • ESTABLISHED 1866

The Torrington Company.. 1640 Fairmount Ave., Phila., Pa.
The Torrington Co., Inc. ...200 Fifth Ave., New York, N.Y.
The Torrington Company, 538 South Wells St., Chicago, Ill.
The Torrington Company, Guilford Bldg., Greensboro, N. C.
The Torrington Company, 210 South Street, Boston, Mass.
The Torrington Company, 1709 Locust St., St. Louis, Mo.
E. G. Paules . . . Bendix Building, Los Angeles, Calif.
The Torrington Co., Ltd., 137 Wellington St. W., Toronto 2, Ont.

Factories at: Torrington, Connecticut • Orange, Mass. Bedford, Quebec • Coventry, England • Aachen, Germany



LOOK for *all* the features that mean lower production costs and higher capacity when you buy new machines. Insist on machines that will conserve power, reduce maintenance cost, increase your output by running at higher speeds. And you are more likely to find all these advantages in machines equipped with Torrington Needle Bearings.

Made by the makers of Torrington Needles, the Needle Bearing is designed to meet the requirements of present-day textile service. A true anti-friction bearing, it makes substantial savings in the amount of power taken by your machines. It keeps your maintenance costs down too, for it needs little attention. The hardened retaining race is made with turned-in lips that form a reservoir for grease and oil—holding ample quantities for long operating periods. The lips fit closely to the shaft, keeping out dust and lint.

You can run your machines at the higher speeds made possible by the Needle Bearing's anti-friction construction—and thus increase your production capacity. There will be fewer interruptions in your production, less time wasted in machine repairs—for the Needle Bearing is designed to give you long service life under severe conditions.

Get all these features in your new machines by insisting on Torrington Needle Bearings. And consult the Torrington Engineering Department about the possibility of installing Needle Bearings in your present equipment. For full information, write for Catalog No. 12. For Needle Bearings to be used in heavier service, write our associate, Bantam Bearings Corporation, South Bend, Indiana, and ask for Bulletin 103X.

The Torrington Company
ESTABLISHED 1866
Torrington, Conn., U.S.A.
Makers of Needle and Ball Bearings
New York Boston Philadelphia Detroit Cleveland Chicago London, England

TORRINGTON
NEEDLE BEARING

If you want to speed up your business and lead the rest

then find out today what G-E Fluorescent Lighting can do for you —

THERE are two ways to speed up production schedules in your plant . . . regardless of the kind of plant it is. One is to train new employees and buy new equipment and enlarge your plant.

The other way—while you're waiting to do all this—is to put in G-E Fluorescent Lighting!

Does that sound too simple? It *is* simple. People can see faster and *work* more efficiently when they have *plenty of light.* And with G-E Fluorescent Lighting you can *have* more light than you ever had before! Light that in color, quality, and coolness, in over-all diffusion, is the closest practical approach to actual daylight ever devised!

When can you get it? Now, tomorrow! Your G-E MAZDA lamp distributor can show you a full line of approved fluorescent fixtures, ready to hang up and use with G-E MAZDA F (Fluorescent) lamps. And that's vitally important. If you want the full benefits of General Electric lighting knowledge and leadership, be sure you actually *get* G-E MAZDA lamps. They assure maximum light output for current consumed and they're made to stay brighter longer! If you want to speed up *your* business, phone your G-E lamp man or your power company *today*, or mail the coupon for the inside story of the most exciting new kind of light developed in the past 61 years!

COMPLETE FIXTURES NOW AVAILABLE

Industrial unit, 100 watts, using two 40-watt, 48-inch G-E MAZDA F lamps.

Industrial unit, 75 watts, using two 30-watt, 36-inch G-E MAZDA F lamps.

Industrial unit, 100 watts, using two 40-watt, 48-inch G-E MAZDA F lamps.

This label identifies Fleur-O-Lier fixtures, made by over 35 experienced manufacturers, and certified by Electrical Testing Laboratories as meeting 50 specifications set up by MAZDA lamp manufacturers, when equipped with ballasts and starters certified by E. T. L.

The certified fluorescent fixtures shown above are only a few of the many complete fixtures now available through G-E MAZDA lamp distributors. G. E. does not make fixtures but is glad to recommend Fleur-O-Liers and RLM Industrial Fixtures.

PRICES REDUCED ON G-E MAZDA LAMPS

On June 1, 1940, General Electric announced sweeping price reductions on Fluorescent and many other types of G-E MAZDA lamps for home and business, including Mercury Vapor and Silvered Bowl MAZDA lamps.

G-E MAZDA F *lamps are recommended for use only with equipment providing good power factor, such as Fleur-O-Liers, or RLM Industrial Fixtures.*

A WORD OF ADVICE

Be sure you get G-E MAZDA F lamps, made to assure maximum light output and stay brighter longer. Remember, unless they have the G-E monogram (GE) they're not G-E MAZDA lamps!

Illustration Copyright 1940 Esquire-Coronet, Inc.

G-E MAZDA LAMPS
GENERAL (GE) ELECTRIC

General Electric Company, Dept. 166-T-L
Nela Park, Cleveland, Ohio
Please mail, without obligation, complete information about G-E Fluorescent lighting for my plant.

Name _____
Name of firm _____
Address _____

MILL EFFICIENCY GOES UP ...WHEN SPUN-LO RAYON GOES IN

"Seconds have hit a new low"

"We run thousand yard warps without a stop"

"The only way we can stop a loom is to throw a hammer in it"

These are actual reports from mill superintendents using the new "continuous process" Spun-lo Rayon

● **Sure you're from Missouri! You want to know why these glowing reports . . . why seconds are down . . . why "loom stoppage" is lower. The answers are in the new "continuous process" which produces a cleaner yarn that is virtually free from knots and broken filaments.**

The new "continuous process" spins, washes, bleaches, dries and twists the yarn as a single thread and gives every filament the same even treatment without once being touched by a human hand. Results in actual mill operation have even amazed us—and we knew it was good!

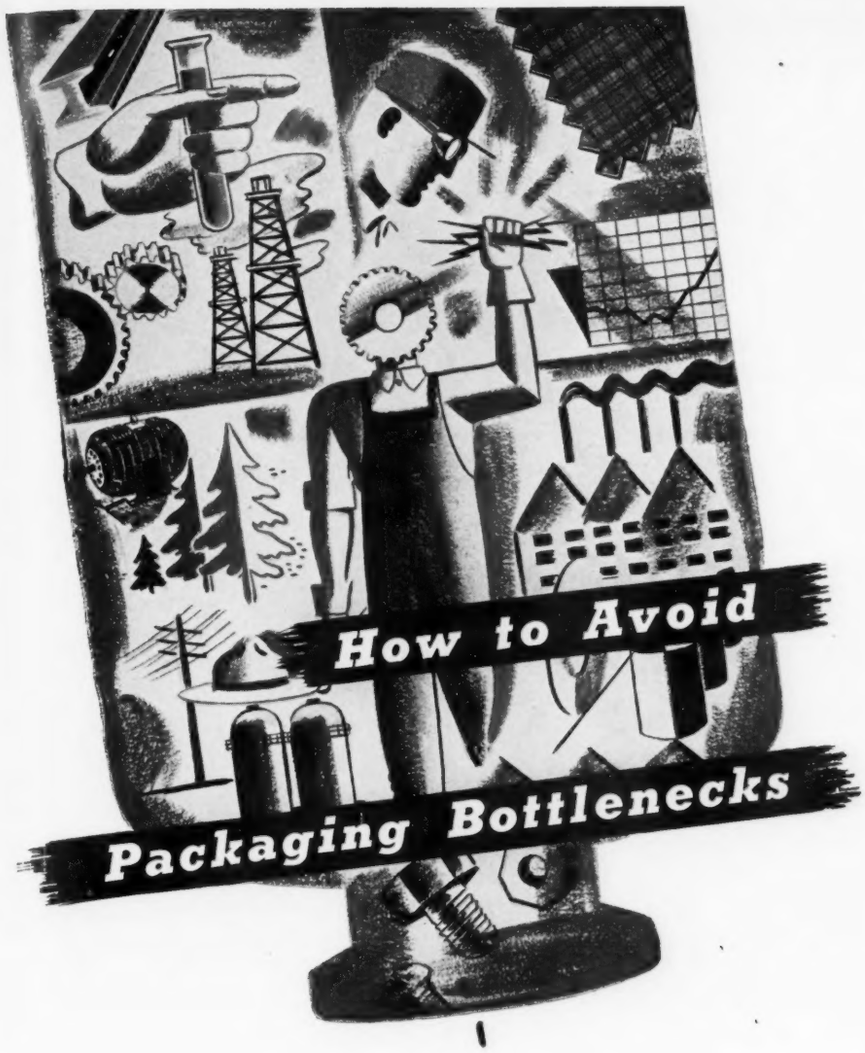
"Continuous Process"

*Spun-lo Rayon

*Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION · CLEVELAND, OHIO

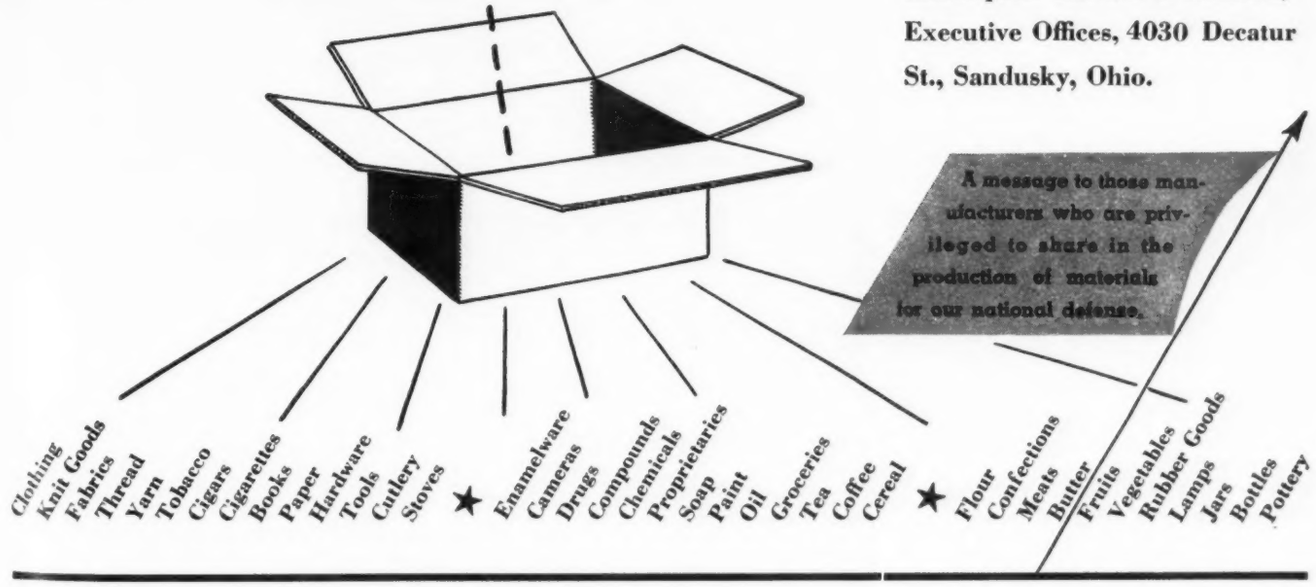
NEW YORK OFFICE • 500 FIFTH AVENUE



Perhaps you've faced the problem already. If not, you're quite likely to meet it soon. Packaging requirements geared to less-than-capacity production can constitute a serious "bottleneck" when called upon to meet the cry of "More! Faster!"

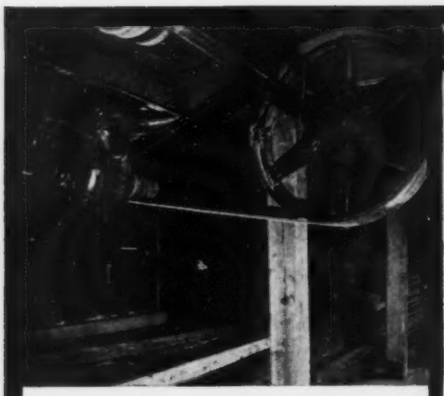
★ ★ ★

What to do about it? Write, wire or phone the nearest office of H & D. *Immediately* a Package Engineer will come to your plant for a survey of the situation, an analysis of the problem. *Immediately* all the facilities of the H & D Package Laboratory will be available. *Immediately* you'll get a solution embodying the skill and experience acquired through many years of pioneering achievement in packaging techniques. *HINDE & DAUCH*, Executive Offices, 4030 Decatur St., Sandusky, Ohio.

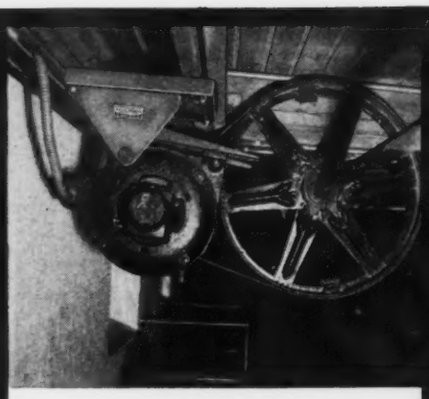


Better See H&D Authority on Packaging

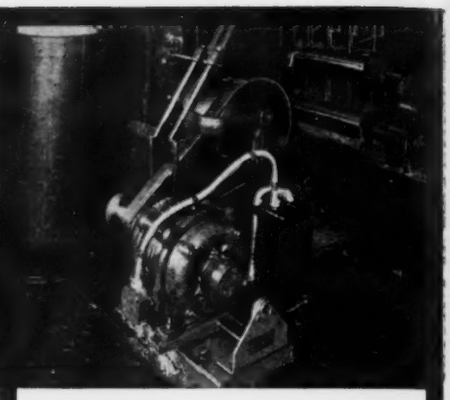
FACTORIES: BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND • DETROIT • GLOUCESTER, N. J. • HOBOKEN, N. J. KANSAS CITY, KANS. • LENOIR, N. C. • MONTREAL • MUNCIE, IND. • RICHMOND, VA. • ST. LOUIS • SANDUSKY, OHIO • TORONTO



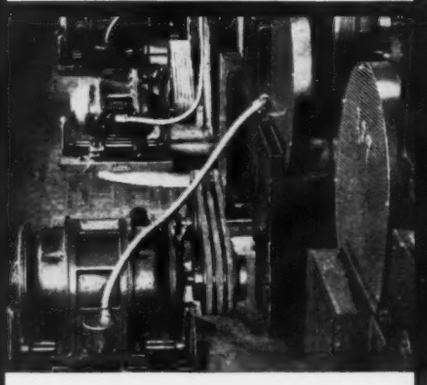
WEAVE ROOM DRIVE—One of seven line shaft drives located under floor of weave shed. Automatic belt tension control has made possible large pulley ratios with short centers, fitting the drives into limited space available.



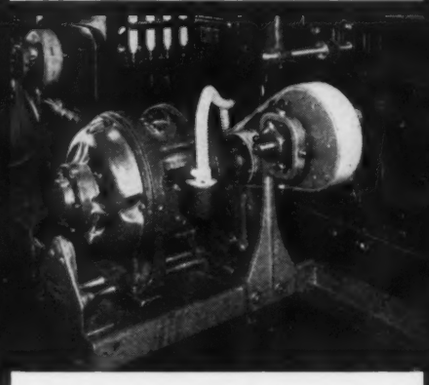
CARD ROOM DRIVE—Tension-Control Flat Belt Drives, mounted on ceiling, drive groups of cards below. Note the very short center distance and the relative sizes of the driven pulley and motor pulley.



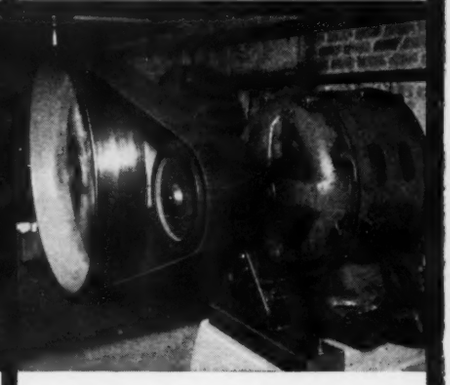
ROVING FRAME—Tension-Control Flat Belt Drives, with tight and loose frame pulleys, have increased production in this mill. These drives provide the slow, smooth start required by the very delicate strand being wound.



SPINNING FRAME—Tension-Control Wedgbelt Drives with Adjustable Diameter Pulleys have provided quick, easy speed changes (over an infinite range) for spinning yarns of differing weights—thus eliminating serious production delays.



SPINNING FRAME—Tension-Control Flat Belt Drives have eliminated frequent failure of bearings and frame cylinders. With normal load of 6 H.P.—but a starting load of 18 H.P.—these drives reduced average belt tension and provided "cushioned" non-slip starts.



COMPRESSOR—Tension-Control Motor Base eliminated the need for a gravity idler on this 50 H.P. compressor drive. As a result, longer belt and bearing life are assured . . . shutdowns eliminated . . . efficiency increased . . . maintenance problem eliminated.

"AMERICAN" DRIVE SELECTION SERVICE

Weaves a PATTERN of SAVINGS

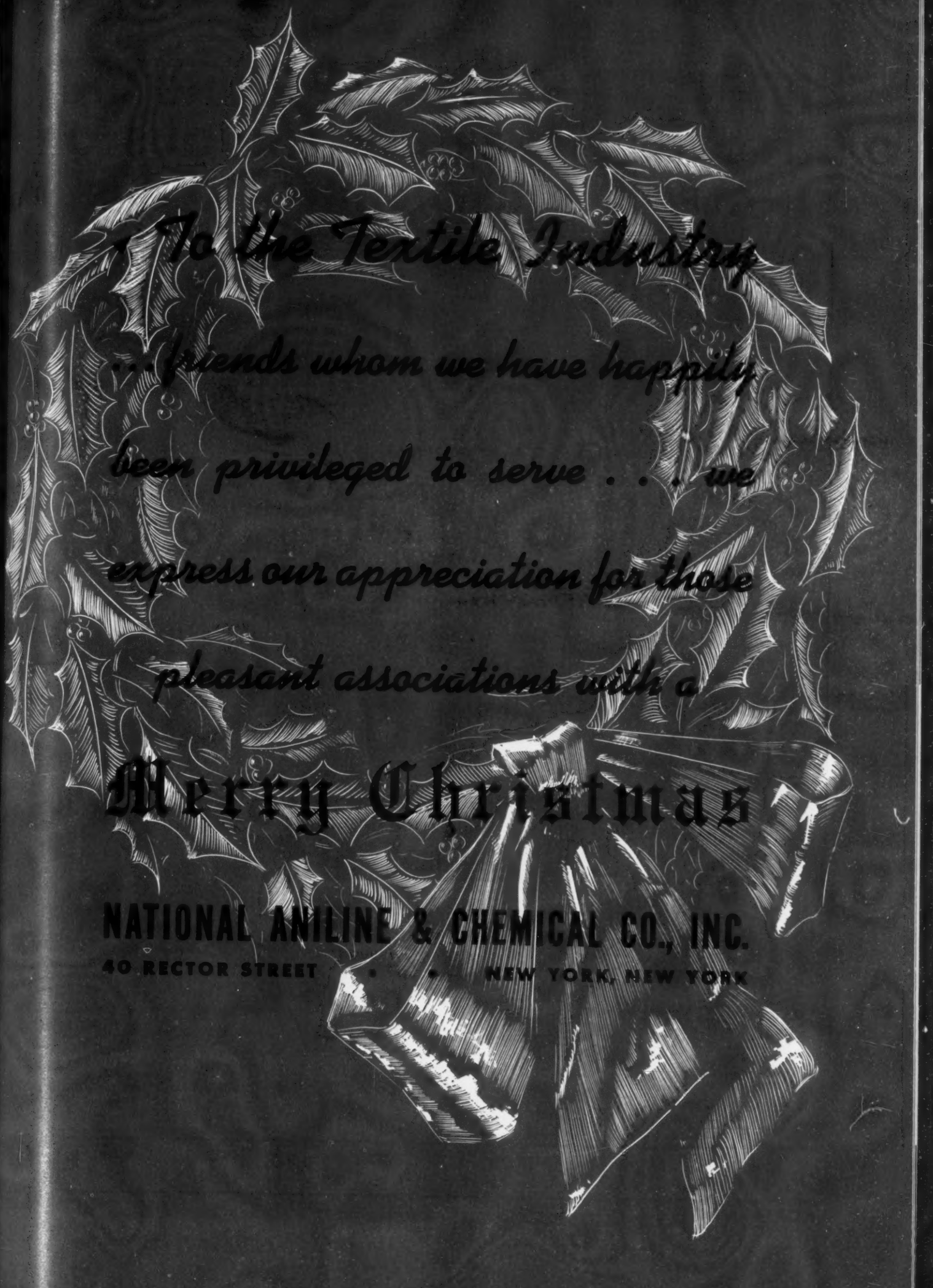
The belt drives shown on this page, taken from our file of case histories, typify the thinking behind "American" Drive Selection Service . . . a recognition that every mill has individual problems for which there can be no standard solution.

This unique service has been responsible for lowered costs in scores of mills . . . production increased, maintenance costs slashed, shutdowns eliminated.

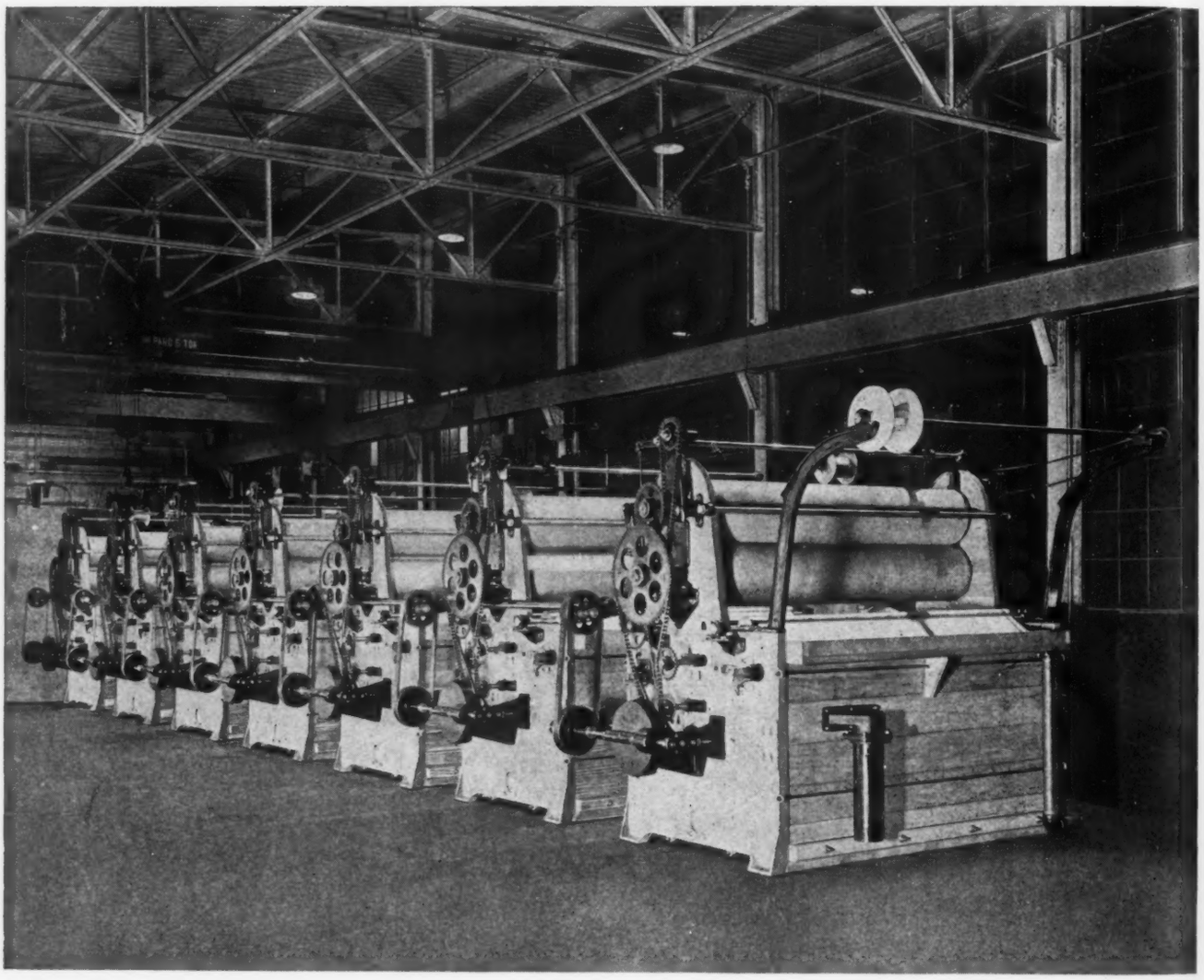
Put your transmission problems up to "American" Drive Selection Service and get the benefit of an unbiased recommendation based on years of practical experience. Simply write us describing the conditions you want to overcome.

AMERICAN
Drive Selection Service

AMERICAN
PULLEY COMPANY
4250 Wissahickon Ave., Philadelphia, Pa.


To the Textile Industry
...friends whom we have happily
been privileged to serve . . . we
express our appreciation for those
pleasant associations with a
Merry Christmas
NATIONAL ANILINE & CHEMICAL CO., INC.
40 RECTOR STREET • • NEW YORK, NEW YORK

THIS *NEW HUNTER* SCOURING UNIT AFFORDS EITHER CONTINUOUS OR SINGLE BOWL WASHING • • • •



JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

Western Representative
E. G. PAULES
343 Bendix Building
Los Angeles, California

In the continuous scouring range shown above, Hunter offers a Continuous Washer that is really flexible. This new Hunter unit differs from all other known Continuous Washers in a very important respect. It is this: It may be used either as a continuous range, or as seven individual Cloth Washers which may all be used at one time with seven different loads, or as few or as many bowls as may be required. The continuous unit can be made for any production requirement.

This new Hunter machine is relatively low cost in its initial expense and is inexpensive to operate. For complete details and actual production records, write to

JAMES HUNTER MACHINE COMPANY

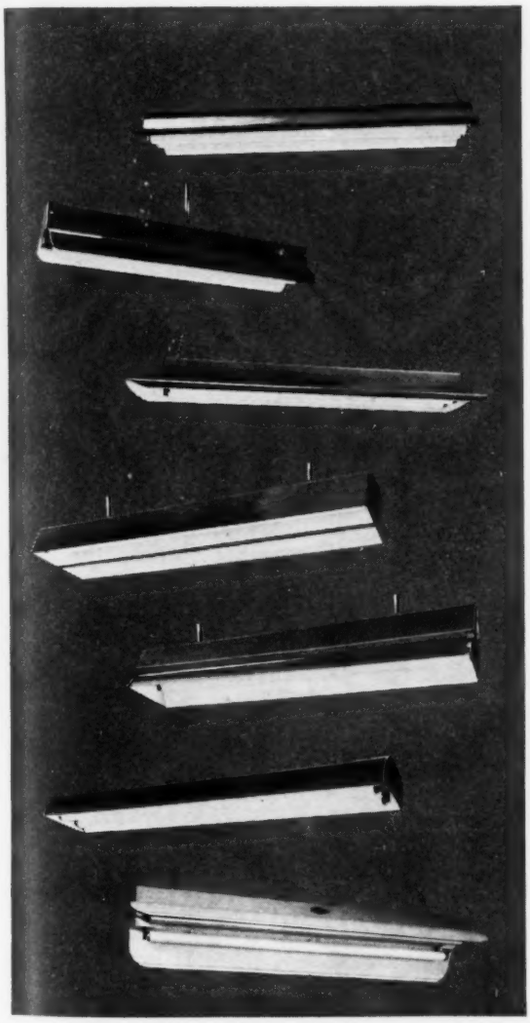
NORTH ADAMS **Since 1847** **MASSACHUSETTS**

24 Hour Daylight Improves Textile Production . . .

Get the Most Out of FLUORESCENT—*with*

Certified* FLEUR-O-LIERS

Here are some of the many industrial type FLEUR-O-LIERS now in use throughout the country. They are available in a wide range of prices and designs . . . ready to hang up and use.



Where uniformity and product quality must be maintained in the face of the demand for increased production, the Textile Industry is finding high-level fluorescent lighting with Certified* FLEUR-O-LIERS the most efficient answer to the problem. On working levels where higher-level illumination is really needed, precisely designed FLEUR-O-LIERS use fluorescent lamps at their best. They help provide cool, glareless light for close inspections . . . make color matching faster, easier and more accurate with far less rejects . . . provide *safer* working conditions.

Over 35 of the country's leading fixture manufacturers make Certified* FLEUR-O-LIERS. They are engineered to comply with over 50 rigid specifications established by the MAZDA Lamp Manufacturers for good light and safe, satisfactory service . . . and they are tested and certified to these specifications by Electrical Testing Laboratories.

When you buy FLEUR-O-LIERS, be sure that all auxiliary control equipment (ballasts and starters) is *Certified.* This assures you of efficient, balanced performance from the entire lighting unit.

Check with your electrical contractor or local distributor for full information on Certified* FLEUR-O-LIERS. Write for FLEUR-O-LIER Fact Book and list of manufacturers.

"LOOK FOR THIS LABEL" ★

It is your protection. *Electrical Testing Laboratories* certify *that* FLEUR-O-LIERS *have met with 5 specifications for Lighting Effectiveness—6 for Electrical Safety—18 for Mechanical Soundness—14 for Electrical Excellence . . . as set up by MAZDA Lamp manufacturers. All Certified* FLEUR-O-LIERS must be equipped with auxiliaries (ballasts and starters) certified by E. T. L.*

FLEUR-O-LIER
"SPECIFICATIONS FOR LUMINAIRES, FITTINGS AND AUXILIARIES FOR FLUORESCENT LAMPS"
ETL
THIS CERTIFICATION IS CONTINGENT UPON EMPLOYMENT OF CERTIFIED AUXILIARIES OF OVER 85% POWER FACTOR

FLEUR-O-LIER *Manufacturers*

Whenever you buy fluorescent lighting . . . Insist on CERTIFIED FLEUR-O-LIERS

TEAR OUT AND MAIL

FLEUR-O-LIER MANUFACTURERS • 2120 Keith Bldg., Cleveland, O.

Please send me helpful information about Certified FLEUR-O-LIERS, packages of indoor daylight for stores ☐ offices ☐ factories ☐

NAME _____

ADDRESS _____

CITY _____ STATE _____

WESTINGHOUSE supplies the answer

New RLM Fluorescent Luminaire for general factory lighting ... available with or without openings for ceiling illumination.

WESTINGHOUSE
COMPLIANCE WITH SPECIFICATIONS UNDER APPROVED INSPECTION PROCEDURE OF RLM STANDARDS INSTITUTE, CERTIFIED BY ELECTRICAL TESTING LABORATORIES

100-Watt Fluorescent Unit with Detachable Hood

Meeting the demand for higher industrial illumination levels, Westinghouse announces its new RLM Fluorescent Lighting Fixture for two 100-watt lamps.

Not only does this NEW Westinghouse unit meet the rigid specifications of the RLM Standards Institute, but also the maintenance-wise specifications of industry for two-piece separable construction.

With lamps removed, a simple quarter turn of two tension-locked thumb latches releases the reflector from the hood without disturbing line connections. The reflector may then be taken down for thorough cleaning. Time for both installation and maintenance inspection is reduced to a minimum since wiring and auxiliary equipment in the hood are readily accessible from all sides.

Westinghouse also makes available a complete line of Industrial Fluorescent Fixtures, including two-lamp, 100-watt open-end porcelain enameled reflectors.

117 Westinghouse Electric Supply Company Offices and Independent Westinghouse Lighting Distributors offer complete local stocks and services. For complete information, write for C. S. 61-152-H, Lighting Division, Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio.

TUNE IN "MUSICAL AMERICANA," N. B. C. RED NETWORK, COAST-TO-COAST, EVERY THURSDAY EVENING.

Westinghouse Lighting Equipment

All wires seat square, flat and firmly into the Foundation.

All wires are parallel.

All wires are even in length.

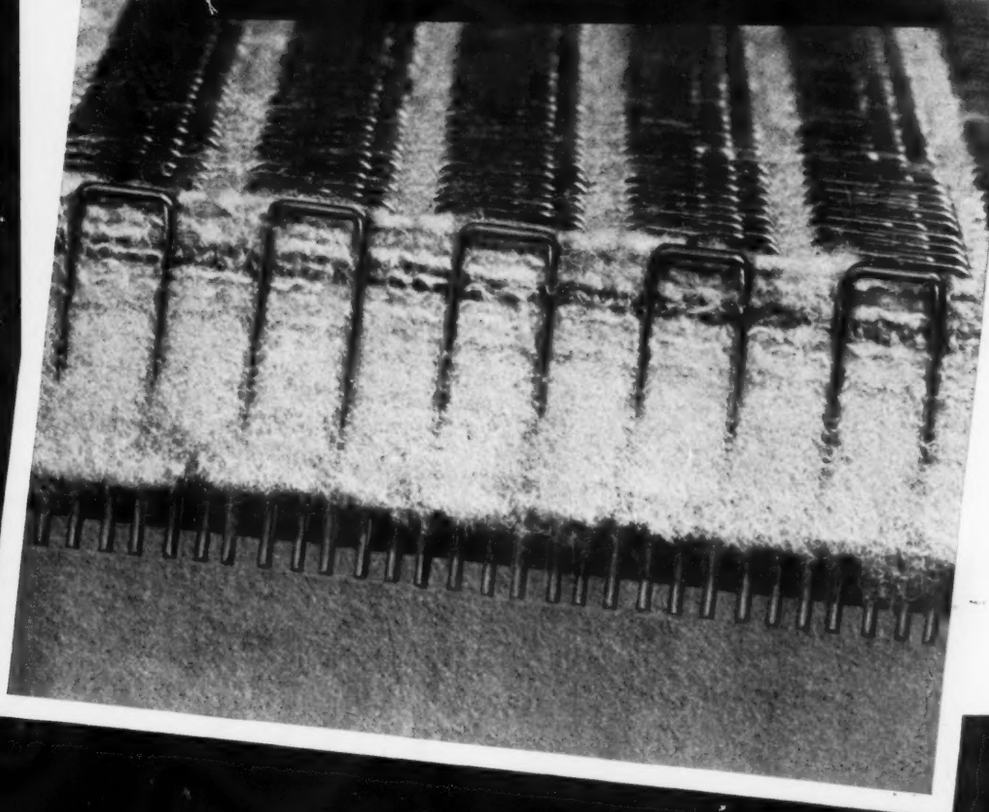
All wires are spaced uniformly.

Microphotograph is 5 times actual size.

TUFFERIZED Card Clothing

(U. S. PATENT NO. 2,174,17-)

An Exclusive Howard Bros. Patented-Precision-Process



TRADE MARK

TUFFER

REG. U.S. PAT. OFF.

CARD CLOTHING

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C. *Branch Offices:* Philadelphia, Dallas

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

---

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

There's DOUBLE in the NEW FEATURES

G-E direct-current motor, Type B, typical of the smaller ratings. Additional protective features and the compact design make it readily adaptable to an increasing number of applications.

G-E direct-current motor, Type CD, typical of the larger ratings.

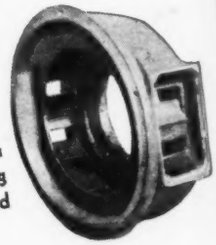
Armature is dynamically balanced. Welded end fingers hold laminations tight. Radial ducts in punchings, and openings in the 4-arm spider that holds them, provide positive ventilation.

The commutator is baked while under high pressure. Then the copper and mica segments are drawn together under high pressure while the commutator is still hot. Red Glyptal varnish applied to the end of this unit provides a smooth, arc-resistant surface.

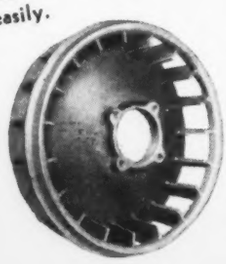
An improved ventilating system, designed for reversible rotation, gives positive axial ventilation through the motor.

The same bearing bracket is used for ball and sleeve bearings, and the bearings can be removed without disturbing brush-rigging connections.

The larger motors have a new "V-type" brush holder designed for reversing service.



Split construction of the highly efficient fan scroll, which forms the drive-end bearing bracket, allows the scroll to be removed easily.



The radial-blade fan is cast-aluminum and specially designed for use in reversing service. The fan is rabbetted and bolted to the armature spider.

E PROTECTION

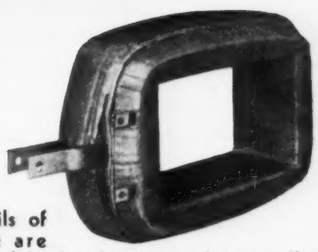
S of G-E Direct-current Motors

Exposed Parts Protected against External Damage

The over-all design of the open motor makes it readily adaptable for use even on jobs that have natural hazards to motor life. It not only safeguards the motor parts, but also increases safety for workmen.

Protected Internally against Electrical Failure

Electrical protection is gained through the use of Formex magnet wire in the armatures and field coils, and by a final treatment of a specially developed Glyptal base insulating varnish which gives additional value to the other fine insulating materials used.



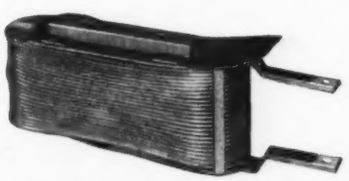
Main field coils of Formex wire are wound on spool bodies having insulating collars that insulate coil and pole from frame. Each coil is taped, dipped, and baked. A completed coil is shown above.

OTHER new features of G-E d-c motors include such improvements as cast-aluminum fans specially designed for reversing service; reversal without changing any part of the frame, fan, or brush rigging; compact assembly; more positive ventilation; lower WR^2; small diameter, which means low headroom needed; and interchangeability of ball- and sleeve-bearing brackets on the larger motors.

Main field pole pieces are laminated silicon steel welded together and securely bolted to rolled-steel frame.

These and additional features which all sum up to increased all-round performance and protection are rolled-steel frames, V-type brush holders, cast-brass brush-holder boxes, accurately centered rabbet fit of precision machining, extra large conduit box, provision for lubricating and flushing of bearing while motor is running, punched commutator segments, Textolite wedges in armature slots for winding protection, and constant air gap.

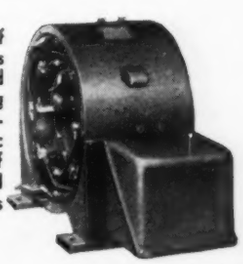
All current-carrying parts and rotating parts, except shaft extensions, can be enclosed readily for protection of operators.



Commutating coils are made of edgewise-wound copper strip with enamel turn insulation, and are insulated from the pole by a layer of laminated acetate paper.

Surely you will want to learn more about motors with such outstanding improvements. These G-E direct-current motors are being applied in increasing numbers on jobs for which standard designs formerly were not recommended. They are fully fitted to fill the bill on your jobs. Call our local office. General Electric Company, Schenectady, N.Y.

Continuous rabbet fit of rolled-steel frame assures accurate concentricity and alignment of the bearing bracket. Additional insulation protects the basic dielectric strength of Formex wire, and red Glyptal varnish protects the coils.



GENERAL ELECTRIC

20 MAKERS OF MACHINES

that "deliver the goods"

HAVE FULL POWER DELIVERED BY WHITNEY

A score of leading textile-machine builders have underwritten the power-dependability of their products by building in Whitney Chains on every drive. For they know . . . *and so do their customers* . . . that Whitney Roller and Silent Chain Drives always deliver a full flow of power at constant speeds that maintain the uniform quality of production.

And the same experience is in store for *you* . . . whether you're a builder or buyer of textile machinery . . . when you specify: "Whitney Chains for all drives." Let a Whitney engineer show you exactly how and why you'll profit. WRITE.

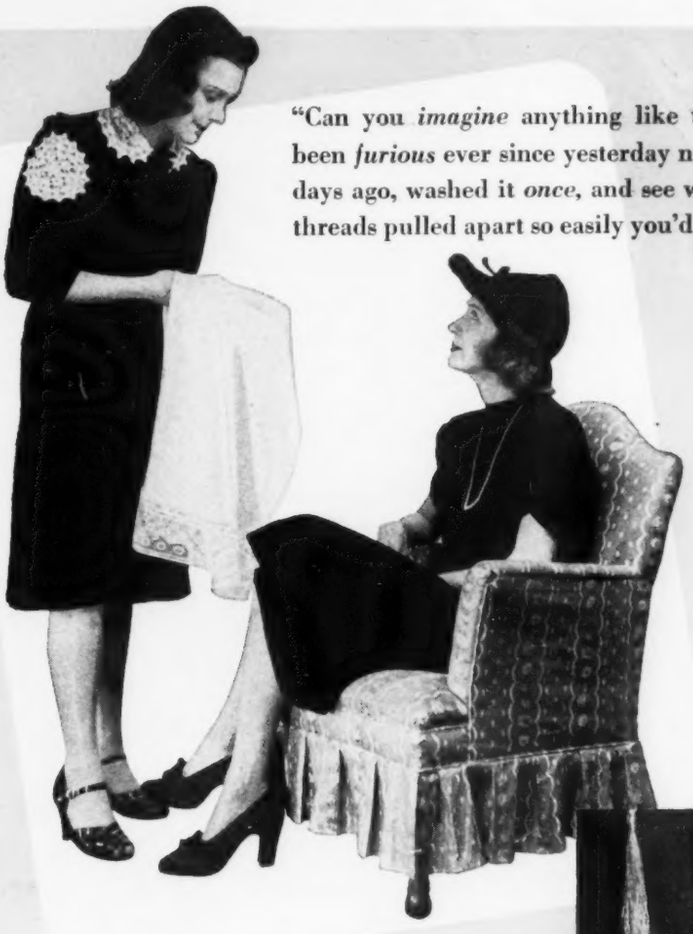
WHITNEY PRODUCTS

Roller Chain & Sprockets, Silent Chain & Sprockets, Conveyor Chain & Sprockets, Roller Chain Flexible Couplings, Automatic Load Limiting Sprockets, Automatic Drive Tensioners, Woodruff Type Machine Keys and Cutters.

WHITNEY CHAINS

THE WHITNEY CHAIN & MANUFACTURING CO., HARTFORD, CONN.

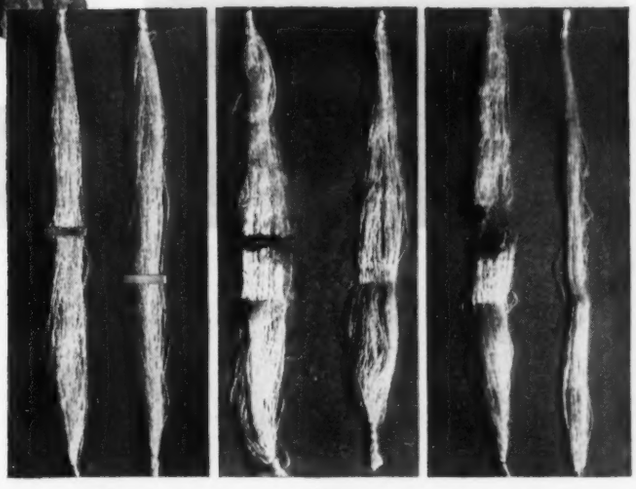
"I'll let you in on Something, Fran..."



"Can you *imagine* anything like this? Seriously, Fran, I've been *furious* ever since yesterday noon. I bought this slip four days ago, washed it *once*, and see what happened. Why, these threads pulled apart so easily you'd think I'd had it five years."

"I don't blame you for getting peeved, Jean, I'd certainly get my money back if I were you—or make them give me another kind of slip."

"That's a good idea, Fran. Let's see now, is the manufacturer's name here? They couldn't *give* me another slip of that make . . ."



A B C

(A) Twin strands of rayon yarn ready for the metallic iron test, with an iron clip at the left, an ARMCO Stainless clip at the right. (B) Clips are removed after exposure to damp air for six days. Note difference in the yarn. (C) After strength test. At exact point of contact with the iron clip the strand snapped at 4¾ lb. tension. Yarn at right (clipped with stainless) withstood 23 pounds without breaking.

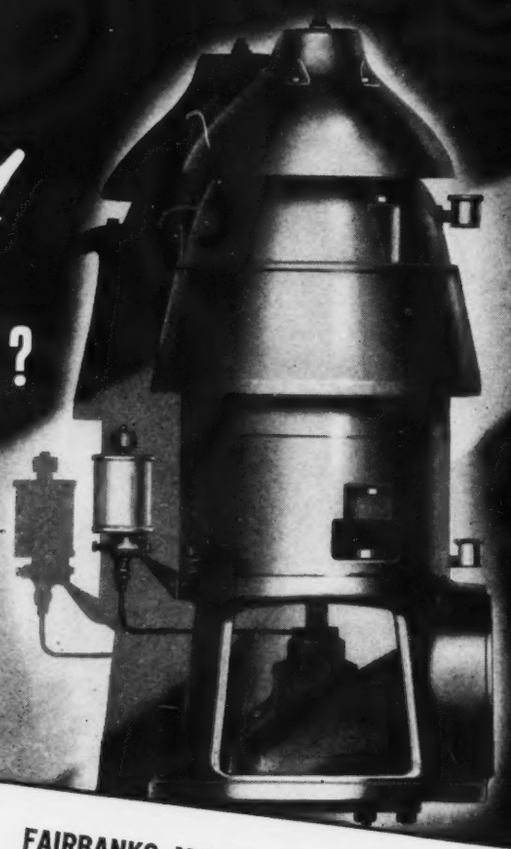
• WHEN EXCESSIVE TENDERING is caused by tiny particles of iron from reels, shafting and other equipment—embarrassing situations like this *can be* avoided. Use equipment made of ARMCO Stainless Steels and you will virtually eliminate one cause of tendering.

Rustless and durable as it is, ARMCO Stainless resists the usually corrosive attack of processing chemicals and prevents iron pickup by the fiber. Then too you get fast dye changes without boilouts, colors stay faithful, and the service life of your equipment is lengthened.

Ask us, or your equipment fabricator, to show you how ARMCO Stainless can help you produce better, more uniform textiles at lower cost. Write The American Rolling Mill Co., 811 Curtis St., Middletown, Ohio.

ARMCO Stainless Steels

Conspiracy IN YOUR PLANT?



FAIRBANKS-MORSE TURBINE PUMPS

Complete range of capacities (35 g.p.m. to 4000 g.p.m.) for electric motor, Diesel or gasoline engine, or steam turbine drive. Open or closed impellers, oil or water lubrication. Today's 6" F-M Turbine is *23% more efficient* than the same size was in 1927; today's 10" turbine is 21% more efficient than the 10" pump was in 1927!

YES, a conspiracy between a pump and the power meter!

A conspiracy that can—and DOES—go on unnoticed year after year in hundreds of plants where old pumps are imposing a 10% "penalty tax" on the operating budget? That *is* happening in your plant—if your pumps are old. Due to improved methods, improved materials, and improved design, today's Fairbanks-Morse Pumps are at least 10% more efficient than the same types were ten years ago. Thus, if your old pump is as good as new (it probably isn't), it is costing you at least 10% more to operate it than it would cost to operate a new one. *10% is a good return on any kind of investment!*

It won't cost you anything to find out how much new pumps would save you. Write Fairbanks, Morse & Co., Dept. 97, 600 S. Michigan Ave., Chicago, Ill. Branches and service stations throughout the United States and Canada.

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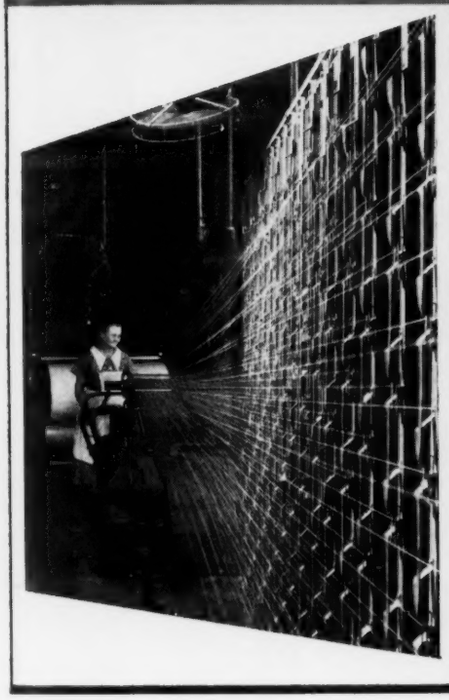
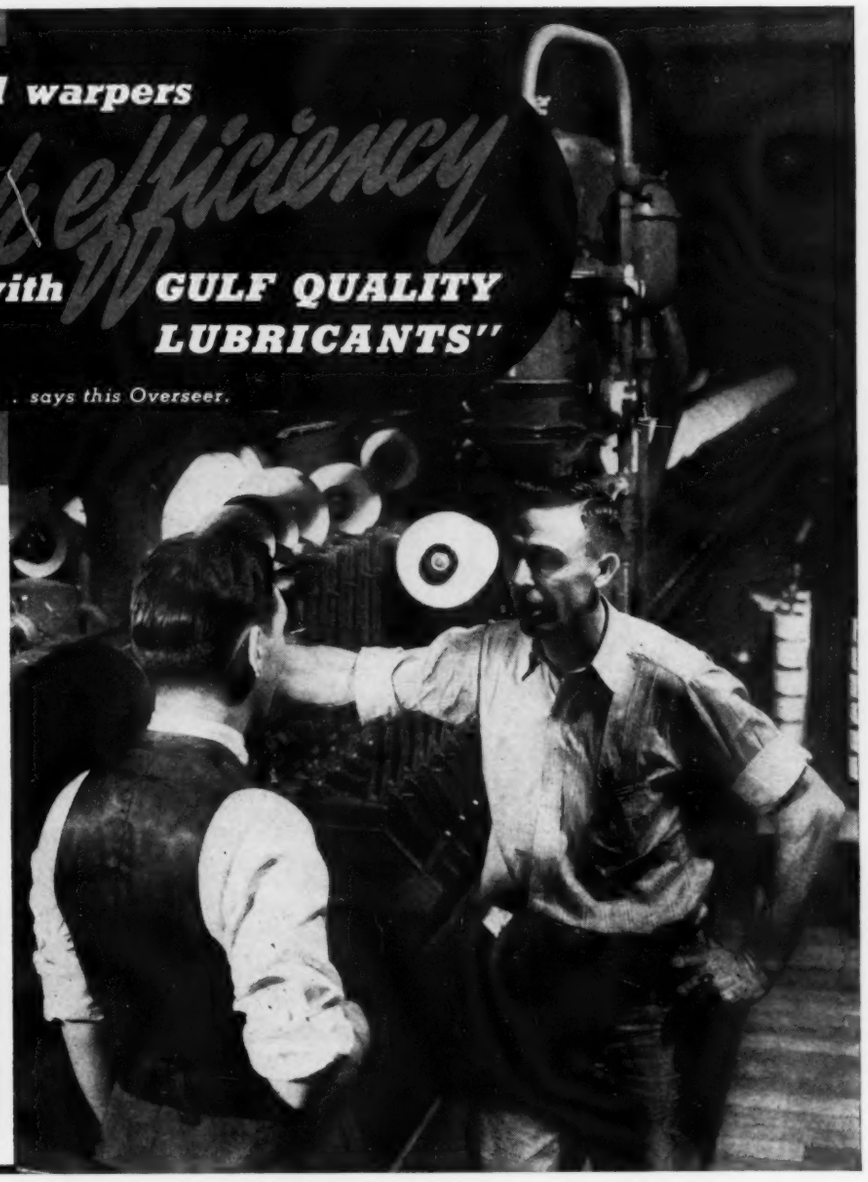
FAIRBANKS · MORSE PUMPS

DIESEL ENGINES ELECTRICAL MACHINERY RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
MOTORS FAIRBANKS SCALES WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS

"Our spoolers and warpers operate at top-notch efficiency with GULF QUALITY LUBRICANTS"

. . . says this Overseer.





"GULF PERIODIC CONSULTATION SERVICE protects our large investment in modern machinery"

"THROUGH the use of Gulf's higher quality lubricants we have insured our costly equipment against the common run of operating difficulties," says this Overseer. "And we are satisfied that these better oils and greases have been an important factor in the fine production records we are making."

Modern high-speed equipment requires stable lubricants which resist gumming and oxidation to a high degree. That is why leading mills throughout the industry have adopted Gulf's higher quality lubricants and are taking full advantage of the cooperative engineering service extended by Gulf's large staff of trained engineers.

Make sure your equipment is getting the kind of lubrication that insures low operating costs and efficient production. Write or phone your nearest Gulf office today and ask an engineer to call. You will be under no obligation—and he can be of real assistance to you.

this booklet will suggest to you a practical method by which you can improve production and reduce operating costs. Write for your free copy.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation - Gulf Refining Company
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Please send me my copy — no charge — of the booklet "GULF PERIODIC CONSULTATION SERVICE."

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Company.....

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MAZLO
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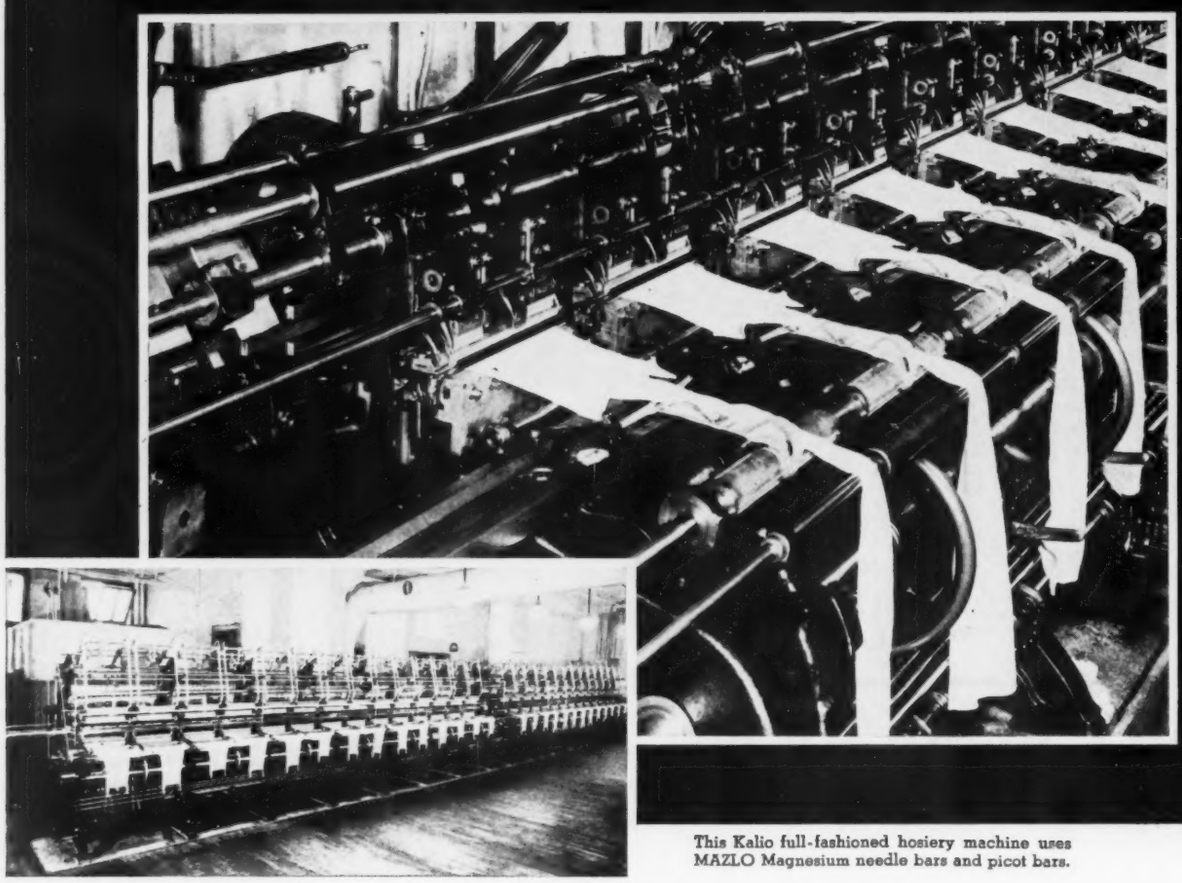
MAGNESIUM ALLOYS

THE LAST WORD IN LIGHTNESS



This Kalio full-fashioned hosiery machine uses MAZLO Magnesium needle bars and picot bars.

Now it's less work to produce more stockings

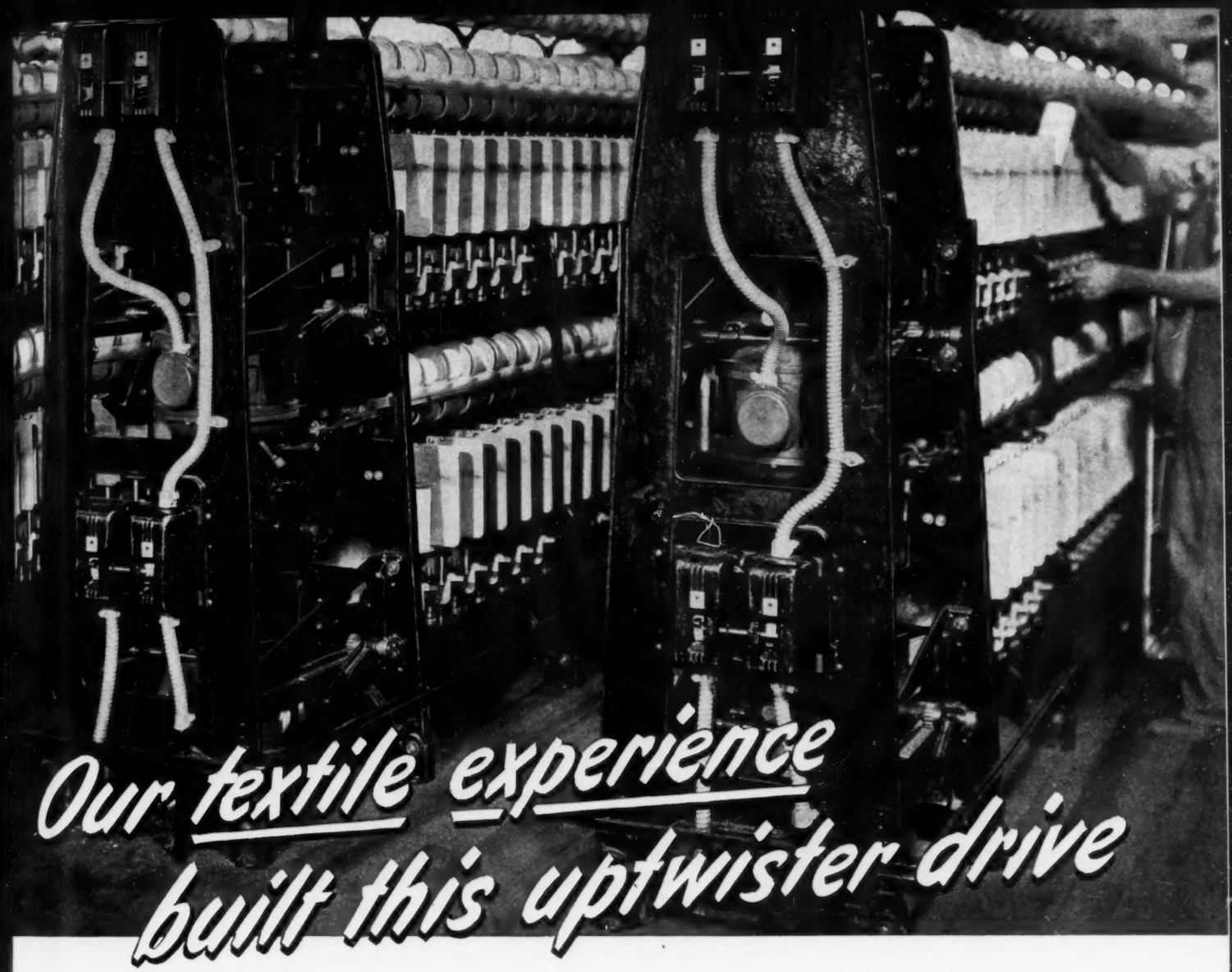
REMOVE excess weight and you increase working efficiency, whether it's man or machine. You get more and smoother production, less wear and tear on the producer.

Karl Lieberknecht, Inc., got these results by cutting the weight-in-motion on this hosiery knitting machine. Needle bars and picot bars are made of MAZLO Magnesium Alloys, weighing only one-fourth as much as iron. High strength of the alloys assures a constant, tight grip on the needles.

Higher knitting speeds, thus made possible, greatly increased production. Maintenance costs are lower. Quality of the hosiery has been further improved. Sales Agent for MAZLO Magnesium Alloys: Aluminum Company of America, 1705 Gulf Building, Pittsburgh, Pennsylvania.

MAZLO

AMERICAN MAGNESIUM CORPORATION



Our textile experience built this uptwister drive

THEIR EXPERIENCE WORKS FOR YOU

For many years, Westinghouse engineers have worked side by side with their customers in the textile industry, to develop electrical equipment especially suited to textile requirements. The experience of these men is available to you, to help you meet today's production problems.

Tune in "Musical Americana," N. B. C. Red Network, Coast-to-Coast, every Thursday evening.

THIS Westinghouse drive provides an easy means of getting a reverse twist and at the same time giving full protection to the special vertical twister motor, machine and operator. The operator has, at all times, complete control of starting, stopping and reversing the twist.

Our constant study of textile processes and manufacturing equipment results in many electrical improvements. It constitutes a good reason why you can safely entrust all your electrical needs to Westinghouse. Thus, you are sure of having your wants attended to by men who combine textile and electrical knowledge and experience. Our local offices will give you prompt, capable service.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
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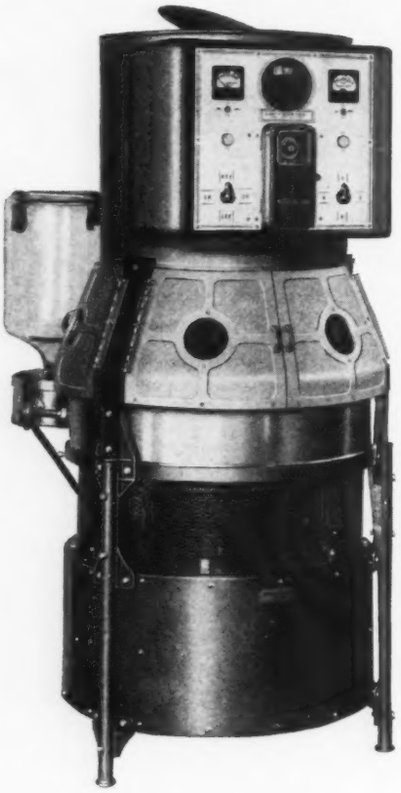
Westinghouse

ELECTRICAL PARTNER OF THE TEXTILE INDUSTRY

In Announcing 1941 *Model* "FDA-R"

ATLAS MAKES FADE-OMETER HISTORY



Anyone in the textile and dyestuffs industry who knows the necessity of predetermining quality prior to merchandising, and of the difficulty in making rapid, accurate, inexpensive tests in terms of consumer use, will recognize in this new model the greatest contribution made in testing colorfastness in twenty-two years.

Retaining the principles which time and use in all parts of the civilized world have shown to be fundamentally sound, and refining where necessary to reflect technological advances in industrial practices, Atlas engineers have incorporated features designed to provide thoroughly dependable and reproducible results.

American industry prides itself on its efficiency. This efficiency must be increased, individually and collectively, if the National Defense Program and the inevitable business expansion to follow is to be met. Atlas accelerated testing equipment has much to contribute in this connection.

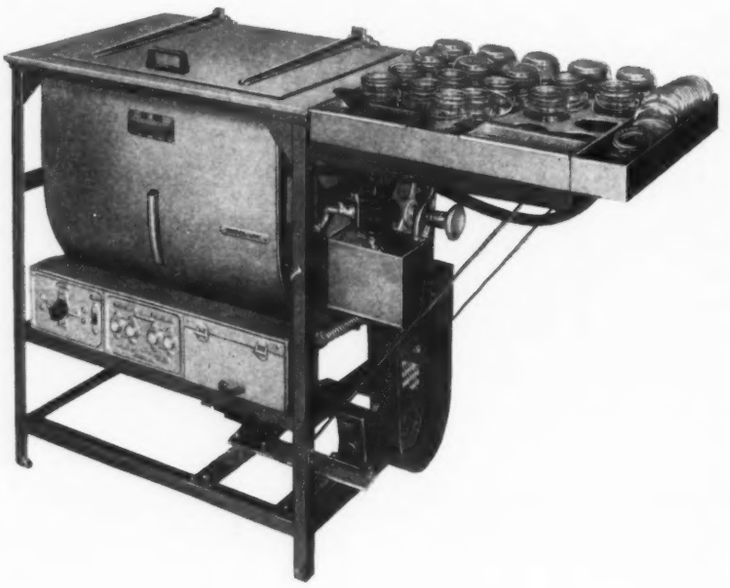
Incidentally, ALL OLD FADE-OMETERS (MODEL FDA) now in use may be converted into the new FDA-R at moderate cost, thus providing the most modern refinements at minimum expense.

Further information, geared to your needs, upon request. No obligation.

In Adding A Preheating Loading Table

ATLAS IMPROVES THE INDISPENSABLE LAUNDER-OMETER

Companion-piece of the Fade-Ometer in most textile and dye laboratories, the Launder-Ometer has been streamlined for accuracy and convenience. Nothing of the design standard with A.A.T.C.C. for making accelerated washing tests has been changed. But this indispensable laboratory instrument has been greatly improved by the development of a preheating loading table which accessory may be added to any Launder-Ometer now in use. Write for catalog and price list.



ATLAS ELECTRIC DEVICES CO.

371 W. Superior St. Chicago, Ill.